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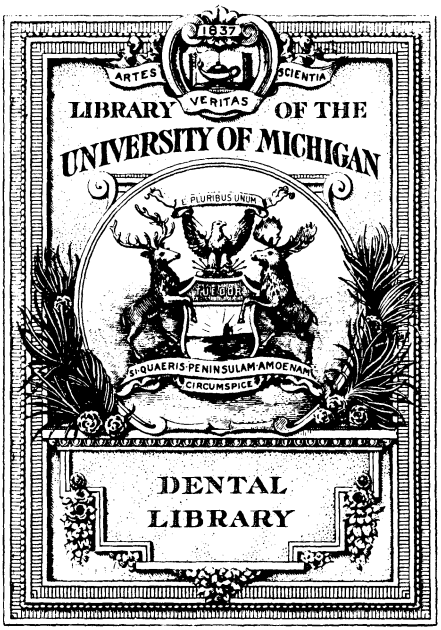
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AMERICAN DENTAL JOURNAL

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PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

ORTHODONTIA.

BY J. N. M'DOWELL, D. D. S.
PROFESSOR OF ORTHODONTIA, COLLEGE OF DENTISTRY, UNIVERSITY OF ILLINOIS.

CHAPTER XVIII.

ETIOLOGY—HEREDITARY AND ACQUIRED.

In considering the etiology only a brief outline of the most important phase of the subject is considered, which may be sufficient to aid in checking conditions that may eventually result in permanent mal-occlusion, or, as an aid, eliminating conditions that have been established.

Fig. 1.

Considerable has been written upon the hereditary side of the cause of the anomalies of the teeth, Dr. Talbot devoting one entire work to the subject—a work well worth reading for those who desire to make a special study of the hereditary side of the subject. The causes that are operative in producing mal-occlusion are divided into hereditary and acquired. According to the laws of transmission, we may expect in some cases to find the same condition in the child that existed in the parents or ancestors, such as missing laterals or super-

numerary teeth. But to overcome hereditary traits does not lie within the power of the dental profession, while to some extent the acquired causes do, for it is possible to check the effect of injudicious extraction, eliminate mouth breathing and its results, finger sucking, restore decayed teeth, etc. Some of the causes which are most prolific in producing mal-position of the teeth may be considered as:

EARLY EXTRACTION OF THE TEMPORARY TEETH.

If too many of the temporary teeth are removed early enough to delay the proper development of the alveolar process, mal-position of the permanent teeth may be the result from insufficient space for eruption (as in A, Fig. 1). In this case the bicuspids approximate the laterals.

TOO LONG RETENTION OF THE TEMPORARY TEETH.

In those cases where nature becomes obstinate and refuses to move one, two or more of the temporary teeth at the proper time, the harmonious position of the arches is modified, and if the permanent tooth is not retained beneath the temporary, it usually forces itself up inside or outside the line of the arch beside the temporary tooth. B, Fig. 1, shows the retention of a temporary lateral and central forcing the permanent teeth to erupt in lingual occlusion.

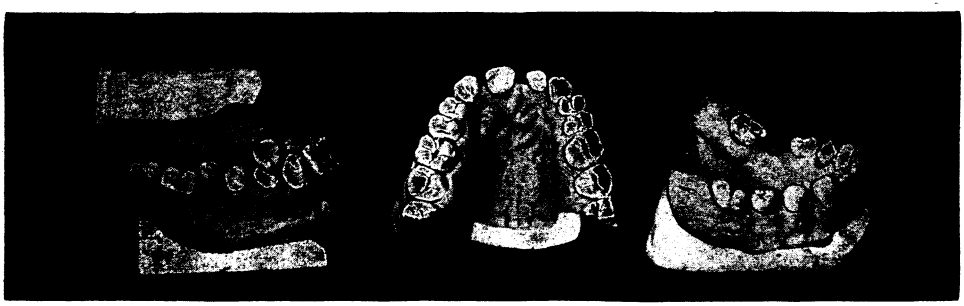

Fig. 2.

SUPERNUMERARY TEETH.

These usually make their appearance with the eruption of the permanent, and as a rule in the anterior part of the arch, destroying the harmony of the arches by overdeveloping one arch and rotating and forcing the teeth from proper alignment. C, Fig. 1, shows a

case where the centrals have been separated one-fourth of an inch by two supernumerary teeth.

MALFORMED PERMANENT TEETH.

Although comparatively rare, when they do make their appearance, are the most evil condition to contend with, on account of the fact that if confined to the anterior teeth, sacrifice of the tooth only aggravates the case.

EXTRACTION OF PERMANENT TEETH.

Injudiciously to force the eruption of the other teeth or from the cause of decay is a practice that the profession can not govern and depends entirely upon the judgment and conscience of the individual. That there are cases at a certain time that require extraction to harmonize the arches and save the facial appearance can not be disputed, but the indiscriminate extraction of the first permanent molar is an everlasting cause for regret. Molars are used for mastication and the force of mastication is greatest at that point. On extrac-

Fig. 3.

tion of a molar tooth the stress of mastication at once causes migration of the teeth, the distal migrating forward, and the mesial migrating backward. Nature intended that each arch should contain only so many teeth. Any variation from this number will cause inhar-

monious relation of the arches and mal-occlusion of the teeth. A, B and C, 2, show the result of the extraction of the permanent teeth.

Disuse may come from extraction or an inharmonious relation of the arches. A tooth that takes no part in stress of mastication soon elongates and nature seems to be trying to eliminate it as it would a foreign article. A, Fig. 67, clearly illustrates the results of disuse.

DECAYED TEETH.

Teeth that are badly impaired as the result of caries soon cause a change in the position of the adjoining teeth. A tooth soon laps over in the cavity of a diseased tooth and causes a change in the position of the teeth in that vicinity, eventually affecting both the upper and lower arches.

IMPROPER BREATHING

May be induced by enlarged tonsils and growths in the nose. Normal respiration should be by the way of the nasal passage. Any interference by growths in the nasal passage or over-developed adjacent tissues, enlarged tonsils, etc., tend to change the breathing from the nose to the mouth. Growths in the throat and nose are pathological conditions and promote disease which naturally interfere with the natural development of the arches, which is characterized by open mouths, short lips, receding chin and protusion of the anterior teeth, and elongation of the upper and lower anterior teeth. (Fig. 3 illustrates a typical case.)

PROSTHETIC DENTISTRY.

BY B. J. CIGRAND, B. S., M. S., D. D. S.,
PROFESSOR OF PROSTHETIC DENTISTRY AND TECHNIQUE, COLLEGE OF DENTISTRY, UNIVERSITY OF ILLINOIS.

CHAPTER XXXVI.

I may be mistaken but at no point in our entire work is there required greater skill coupled with deep knowledge of psychology than in the complete harmonious restoration of the edentulous mouth. To bequeath to such an unfortunate the original God ordained expression demands a keener insight into regional anatomy and correlated sciences than any operation which can possibly come within our domain. This full appreciation on the part of the profession can be accomplished through no safer channel than by incorporating in the curriculum of the dental schools a chair to be filled by a facial artist. Let the students model in clay, carve in ivory and sketch on paper the various important elements which enter into an understanding of the basic outlines of the mouth. They would acquire through this means digital dexterity and cultivate their perceptive powers. With this in view I have incorporated in the College of Dentistry, University of Illinois, a course on facial technicology, and of its results I am satisfied. This course will aid the students in their professional careers to draft sketches of their work and assist in countless ways. We will not give any consideration to the anthropological aspect of this subject, since this would involve too much of our paper and lend little to its true purpose. The two types, the prognathous or "forward jawed" Australian, and the orthognathous or "straight jawed" European are distinct subjects and the angles of these two classes are known to all.

Artists are observers and they discern many things which we overlook. They may not comprehend fully the substructures, but the superficial does not escape their critical judgment.

They tell us that a full forehead has as its accompaniment a retreating mouth; that when the frontal eminence is decided the jaw is protruding; that the upper third of the face is retreating when the middle third is prominent; that when the lips are large and full

that the lower third of the face is massive and forms the basic section of physical expression.

Artists say that to depict a stern and unyielding person it is essential to have the upper lips straight and without outward curve, as in Washington.

To indicate a reserved and cold disposition the lips must be stretched from the center and made to look thin and shapeless as in the face of John Quincy Adams; while when the face is to typify loving and charitable elements the lips must be gathered and be made round and full. Mothers who love their children to the point of worship possess these Greek Venus lips. James Monroe displayed these formations and his loving disposition and affection for children corroborates the silent voice of his mouth.

The lips of disdain, the sculptors say, is where the lower lip is protruded and partially curved upon itself and the corners of the mouth considerably below the center, while to portray the dissipated individual a thick, bloated and shapeless lip is carved. This drooping lip with sharp corners speaks a sad tale of self-indulgence.

To illustrate the mirthful lip it is essential to have it possess the dual lines of beauty as portrayed by Hogarth. These serpentine lips are well proportioned and as betokened in Voltaire. A small mouth on a mature person indicates a child-like disposition; these rosebud or baby lips do not convey strength of character.

Sculptors tell us that when the upper lip is short, scarcely hiding the teeth that this partly open and gaping mouth belongs to weak minds. Imagine a Napoleon, Cæsar or Washington with this George the Third mouth.

Sculptors like dentists place their work in full view of public criticism. The artist usually paints but one side of the face and usually the better or more symmetric side, while the sculptor and dentist must deal with the full features and allow the critical judges views from all sides, hence making our task doubly difficult.

The specialist, Stanton, calls attention to what is known as the cheek of consumption, or the concave cheek, and says that the difficulty lies in the lifelessness of the zygomatic section. Dentures must have upon them aluminum or metal wings to assist in contouring the depressions.

The puffed condition of the oris muscle, as in dyspeptics, could

be avoided if the dentures were molded to conform to a prominent alveolar ridge.

The artists and cartoonists call our attention to the sharp pointed and crafty chin as shown on Cardinal Richelieu, and the round or bulldog jaw bespeaks of the antagonistic nature. These are all attributes of the great variety of faces we have to mold. It may not be our good fortune, when we construct dentures, to be among those who are making history, but you will agree that we are making character, and this is primal in record formations.

This is an intensely interesting subject to such as fully comprehend its influence and though in my previous papers and as in this article I have but touched the border lines of this broad, far-reaching theme.

The generous appreciation which my former articles elicited induced me to give you this additional contribution and I trust you are interested. Some may say of what use is a knowledge of such artistic minutiæ, not any of us will be likely to enjoy or employ its blessings. That may be true. Not all you have learned, converts itself into currency. You studied Latin not with the expectation of talking that language or even communicating thought through its channels. You likely took the course because of its mental discipline. So, too, with this. An intimate knowledge of facialology will be an artistic discipline which may awaken in you latent inclinations which would tend to elevate your profession and place it high among attainments. Any denture which impinges upon the easy movement of the orbicularis oris, or detracts from its freedom of mobility disturbs the normal expression of this most sensitive muscle. Hence a denture which encroaches upon the muscle of expression necesarily limits its function and abridges its true significance.

Possibly in no phase of art is such tender care requisite. I know of no feature in all surgery or prostheses which requires such sensibility as to parts and environments. We have not as yet deduced a safe and practical method for assuring facial restoration, but if we follow the guide lines of artists we can not go far astray. They criticise our work, not fully comprehending the multiplicity of our obstacles and contentions, but they warn us against allowing a puckering of the mouth or an undue extension of the muscle causing a distension of the oris muscle.

The lips must be at ease. The superior one hanging loose as a curtain, while the lower lip encroaches without materially supporting the upper. Any deviation from this arrangement will necessarily deprive the mouth of its characteristic pose.

Artists quite generally agree that the corners of the mouth are slightly lower than the middle and when the teeth are too short it causes the lower lip to curve and fold upon itself because of the support it must give to the upper lip.

Again when the teeth are considerably too short, and this is often the case, there is brought about a dual fold on the face, the one extending from the corner of the mouth downward and backward, the other beginning at the alea of the nose and pointing downward and backward. These two decided wrinkles cause a peculiar ridge which molests the orbicular muscle in its zygomatic attachments, In fact, the smile is completely eliminated and only when the patient laughs is there any disposition to move the zygomatic fibres.

When we become fully awakened to the importance of the corner of the mouth and the general preservation of the normal lip mobility we shall have made the most decided step forward that the prosthetist has yet accomplished. It will establish for us a prominent place in the personnel of the art world—this will mean that our services will be appreciated and what more ennobling vocation can we have than to improve and preserve the human face divine?

(To be continued.)

ACID TREATMENT FOR PYORRHEA ALVEOLARIS.

The most successful method I have used in the treatment of pyorrhea alveolaris has been by the use of acids, and I think there is no acid more potent than the aromatic sulphuric acid, which might in some cases be increased by the addition of a little sulphuric acid of commerce. This is a weak solution, only 13½ per cent of the sulphuric acid of commerce, with a little ginger and cinnamon, but when reduced (adding to about one part of the acid three of water) and with a suitably formed syringe, carrying the preparation around the tooth, we can see the parts improve rapidly.—*Truman W. Brophy, Chicago, Review.*

DENTAL THERAPEUTICS.

BY GEORGE W. COOK, B. S., D. D. S., CHICAGO, ILL.,
PROFESSOR OF BACTERIOLOGY AND PATHOLOGY, UNIVERSITY OF ILLINOIS; PROFESSOR OF ORAL SURGERY, DEARBORN MEDICAL COLLEGE.

CHAPTER XXXIII.

We have laid stress on the dangers of anæsthetics when chloroform or ether is the agent to be used, still it is a remarkable fact that when death occurs it is always unexpected; therefore, it is the unexpected that we must be prepared for always.

The number of deaths, so far as records are concerned, is quite unreliable. So we must base our figures somewhat upon the cases reported. Thus in the London hospitals it was reported that one death occurred from choloroform in one thousand two hundred and thirty-six; Juillard gave one in three thousand two hundred and fifty-eight; Lawrie gives a series of cases of forty thousand without a single death. However, in figuring up all the facts that are reported it might be said that the fatalities from chloroform average about one in three thousand. The fatalities from ether seem to range from one in three thousand to one in sixteen thousand; however, to strike an average we would say one in ten to twelve thousand. So it will be seen as a matter of comparison that ether has the preference, so far as our statistics show us, between the two.

In those cases where fatal results occur there are but few that any definite reasoning could possibly be given of barring those in which obstruction of the air passages occur, which has been known to happen from false teeth, plug of tobacco, or something of that nature, getting into the air passages. It has also been observed in a few instances that the patient may vomit or attempt to vomit, and a portion of the contents of the stomach may pass back into the air passage and produce the same condition as would be caused by any other foreign object in the respiratory tract.

The cause of death under the two agents named is a subject that has elicited a great deal of discussion, and as has just been said, no definite and sufficient reason can be given for the fatalities that sometimes happen. It is said in some instances that the pulse dis-

appears and the breathing becomes arrested in a moment or two of the secession of the pulse, while in other cases the respiratory function has become almost entirely arrested long before the pulse will show any special tendency toward this appearance. These two phenomena are unexplainable at the present time. Some of the lower animals, like the dog, and cat, show almost identically the same variation as do most human beings.

We say many times that persons have a special idiosyncrasy to a drug and they die because of this special condition. This word idiosyncrasy helps out many times our ignorance and incompetence, and if the true condition of the case were understood it would not be necessary to adopt this term as an explanation of the causes involved in such cases.

It was formerly stated that death occurred in the early part of anæsthesia, due to reflex action, which occurred either on the heart or respiration, due to the irritating action on the sensory nerve endings in the nose and throat. This theory has not altogether been disproven; other authorities of excellent reliablity claim that death only occurs when the agent has been absorbed into the circulatory system.

With reference to the reflex action produced on the sensory nerve endings in the nose and throat, this corresponds very closely to that of ammonia and acetic acid. But in the last two named agents no fatalities have been reported. The cause of death after absorption is a phase which has been discussed for a great many years. Up to about the year of 1889 the impression that usually prevailed was that ether paralyzed the nerve centers of respiration, while choloroform acted upon the cardiac nerves, paralyzing them, followed by paralysis of the respiratory centers. Snow and others claim that chloroform paralyzes the respiratory centers. In 1889 the London *Lancet's* criticisms of the results of experiments in Hyderabad led the Nizam (Prince) to appoint a commission to investigate the cause of death during chloroform inhalation; and the commission rendered its decision that chloroform caused death by its paralyzing effects on the respiratory centers in animals.

This report has received a great deal of criticism; literally, however, it may be true that respiration is the first to be affected, it is also true that as long as the circulation can be kept up respiration can be carried on. The conditions where breathing fails is usually variable according to the concentration of the vapors.

In the physiological laboratory of the Chicago University, Dr. S. A. Mathews, who is one of the most expert in the experimental work on animals, considers his animal is usually safe so long as the heart's action can be kept up; but he has repeatedly stated that after the great range of experience that he has had with the administration of chloroform and ether on animals, he always has the fear that there is always danger in the use of these drugs, and that he has been quite unable to determine as to whether the agent acts first upon the respiratory or the heart centers in fatal cases.

The therapeutic use of ether and chloroform are usually for anæsthetic purposes in surgical operations or examinations and in cases of labor. These drugs are very seldom prescribed for internal use, but their external or local use is not at all uncommon and many times in conjunction with other agents they form a number of valuable and useful compounds, or alone they are sometimes of great value. They are sometimes used for the same purpose as the volatile oils, but on account of their rapidity of volatilization the oils are preferred as counter-irritants. Chloroform water is a valuable antiseptic agent, but too volatile for ordinary surgical use.

Both chloroform and ether are used in expectorant mixtures and are believed to increase the bronchial secretions. Ether evaporates very rapidly, and when ether sprays are thrown upon the skin it has a benumbing sensation; if continued for some little time will produce a kind of freezing of the tissues, a condition that has been considered of some value for local anæsthetic purposes.

For dental use, outside of the anæsthetic properties, ether and chloroform, and especially chloroform, have played an important role in the treatment and filling of root canals. There is possibly no agent having a more deleterious effect upon the lower forms of animal and vegetable life than chloroform.

Davenport says that chloroform and ether seem to affect all protoplasma anæsthetically, both the higher vegetable as well as animal life. Demoor, in 1890, carried on a series of experiments in which he says: "The action of this reagent (chloroform) one-fourth of chloroform and water, from two to five minutes, produces very intense excitement in the movement of protoplasma; then the cytoplasma gradually becomes immovable and dies in from fifteen to thirty minutes." The nucleoplasm is not acted upon so energetically as the cytoplasma. Swarm pores, which are highly responsive to

light, and weak solutions of chloroform have such an effect as to prevent locomotion; they destroy the power of the protoplasma to respond to stimulus, and yet after some exposure to a weak solution of water and chloroform for ten minutes, if these spores be transferred to proper environment, they will after some time respond to their environing fluid and growth. Upon these bases do Davenport and Demoor lay special emphasis upon the fact that they anæsthetized the protoplasma instead of destroying them.

I have made some experiments with chloroform on bacterial life, to find in some instances that chloroform has a very destructive influence upon some forms of bacterial life, while on others its effects were not so deleterious. The well known preparation, gutta-percha, which is used for the filling of root canals, I find by taking a platinum needle and dipping it into various growths of bacteria and then dipping it into chlora-percha, leaving it at various intervals, that its effects on bacteria varied with each particular specie. The chlora-percha has sufficient affinity for the chloroform to retain this agent for a sufficient time to kill bacteria with more positive results than chloroform and water.

In treating root canals in teeth and especially in a putrescent state, chloroform has a very beneficial effect, inasmuch as it dissolves the putrefactive material in the root canal of the tooth. Many of the ptomaines that are formed in putrescent canals are not affected by alcohol, consequently chloroform is the next best thing in cleansing out the canal and dissolving the products of putrefaction. If the treatment is done with care a great deal can be accomplished with the use of chloroform in the first treatment, always being aware of one fact that a pledget of cotton soaked in chloroform is placed in the pulp chamber and with force the substance is carried down the canal and allowed to remain. The evaporation of the chloroform may carry the bacterial contents of the canal down to the apical end of the root, thus establishing an irritation that will cause some soreness and pain in the tooth. However, there is this to be remembered, that the irritation from the chloroform is not as long in its effects as is that of many of the volatile agents; for as we have just seen from Davenport's and Demoor's experiments, they were of the opinion that the chloroform had an anæsthetizing effect rather than an irritating one. But if bacteria be transferred from the root of the tooth to the soft tissue without being destroyed by the action of

chloroform, then a deeper and more serious infection may occur, because it will be remembered that after the putrefactive stages of the pulp has passed into a liquefied substance, there has been formed some bacterial irritation; or, in other words, the products of bacterial decomposition of the pulp have lowered the resistance of the tissue surrounding to the extent that the bacteria will find a more suitable habitat for growth and proliferation than if the tissues had not been interfered with by having this decomposition material going into the tissue surrounding the tooth. So in such cases chloroform has a valuable effect on rendering the roots of teeth in as nearly an aseptic condition as could be expected. Of course it will be understood that ether would produce very much the same results, in fact, ether will precipitate many of the alkaloidal-like substances that are found in decomposition of organic nitrogenous compounds.

Since we have shown that alcohol, ether and chloroform come from the methane group, we may expect that any one or perhaps all these compounds may dissolve the ptomaines or toxines that are by putrefactive processes formed by bacteria. We have also shown that chloroform or ether may enter into a loose chemical combination with protoplasma or some one of its chemical elements; this does not always necessarily mean that it will destroy the vitality of the protoplasma at once, but renders it non-motile or arrests its activities to the extent that possibly metabolic changes may take place in which death may follow later, remembering, too, that bacteria belongs to the vegetable kingdom and that they may be more easily affected by chemical agents than if they belonged to the animal organism; thereby making chloroform or ether a more efficient antiseptic agent than many of the substances usually classed as antiseptics or disinfectants. The time may not be far distant when it will be necessary to change our terms "antiseptic" and "disinfectant" to mean a more specific action than they at the present time do. However, these are questions for future investigations in the field of preventative sepsis.

In closing our remarks upon the methane group as applied to alcohol, chloroform and ether, we should remember that the methane series is characterized pharmacologically by the production of depression of the central nervous system, more especially by its cerebrum, and are by far the most extensively employed in connection with modern surgery than any other drugs at present. With the exception of alcohol, which has been known since prehistoric time, the other mem-

bers of this group have only had a life cycle of about fifty years. During this time chloroform and ether has become widely used and known throughout the civilized world; and yet in our dental associations and dental journals we heard a word of warning to those who are liable to suffer with over-enthusiasm to render some individual unconscious and incapable of demonstrating their true condition, other than by physical signs and symptoms, which are so poorly understood by many. The person who is most familiar with general anæsthetics is always more conservative about its use than those who have had but little experience. As there are other compounds belonging to this pharmaceutical series, we will have occasion to refer to these agents again.

(To be continued.)

ANESTHESIA.

Incomplete or partial anesthesia as a cause for accidents is usually brought about in this way: A patient comes into the office and wants a tooth extracted, but can not stand to be hurt. She wants to take just a little chloroform, not enough to put her to sleep, for then she might never wake up. She wants just enough so that she will not feel the tooth when it comes out. This simple and innocent sounding request, if complied with on our part, renders a trivial operation, that would not be at all dangerous if no anesthesia was used or complete narcosis attained, extremely dangerous under imperfect anesthesia. Now, if we put this patient under complete anesthesia, all reflex action will be abolished. But if anesthesia is incomplete or imperfect, the shock or pain from extracting a tooth may contract and arrest the heart action. At the same time the blood continues to flow into the dilated capillaries and veins, and the heart fails to maintain sufficient blood pressure to re-establish the normal arterial circulation.—*A. D. Kyner, Moweaqua, Ill., Review.*

OPERATIVE DENTISTRY.

A Series of Shop Talks.

BY R. B. TULLER, D. D. S.,
CLINICAL PROFESSOR OF OPERATIVE DENTISTRY, CHICAGO COLLEGE OF DENTAL SURGERY.

No. VI.

EXAMINATION OF TEETH FOR CARIES AND OTHER CONDITIONS NEEDING THE ATTENTION OF THE DENTIST.

There seems to be a somewhat prevalent idea, for which the dentist is to blame, that examinations of the teeth should be done gratis. Seldom can this service be thoroughly performed without consuming some time, and not infrequently without cleansing away more or less of accumulation and deposits (and in fact a thorough cleaning should first be done), and a reasonable fee should be claimed; and especially of people who come in casually and without any well defined idea of following the examination by engagement of services for needed repairs. If there is no expense attached, too many are willing to accept examining service and get an opinion, some advice and perhaps an estimate of cost of repairs just to pass the time, confirm a suspicion or to compare with one or more other dentists to whom they have been or intend to go. As a rule all new patients seeking such a service, unless coming properly recommended, should be charged a fee, which may be remitted in case further professional service is performed, if the operator feels it is in any way an overcharge, or to soothe any feeling the patient may have about it, knowing that some dentists do not make a charge. It is well to have an understanding about the fee at the outset.

With families already established as our patients and who make regular periodical visits, a special charge for examination would be somewhat out of place, since it is a part of our business to keep a close watch upon the teeth entrusted to our care, and we might well be blamed if we neglect this duty, if our patient has been faithful on his or her part in presenting himself for our professional services.

We all have patients, I presume, who imagine that our examinations are too searching. Or, in other words, they have an undercurrent of suspicion that the rest of the world is not as honest as themselves, or else are no more honest than themselves, and are prone to believe the dentist finds more work to be done than there really is. It is a satisfaction to most people, even those who have full confidence to be shown the places and conditions when it can be done clearly and consistently; and it is to the dentist's credit to be disposed to voluntarily make all his discoveries as clear and plain as possible, using hand glass and mouth mirror for the patient's observation.

How often it occurs that some patients ask if such and such places must have immediate attention, or if the filling can not be deferred a few months without serious detriment. This comes often because the discovery of unexpected cavities are discouraging, both as to pain anticipated and in reckoning the cost. Of course, some of the minor defects may be passed over for a few weeks or months without serious damage, but as a rule delays are dangerous and the patient should be so impressed; for we can not tell how rapidly the carious inroad may be going on. There are frequently black or brown spots on teeth, sure evidence of the tooth structure yielding to some penetrating influence, but as yet perhaps the outer surface is unbroken. This seems smooth and hard; nothing indicating a pit. If, however, this really hard outer crust or layer is broken through with an instrument, a chalky condition is found underneath which will easily yield to the bur or excavator for considerable depth.

Now this sort of condition may go along for months and months before a pit is established; but usually when this hard surface layer does yield, that which is behind it quickly disintegrates, with the result that a somewhat deep hole is developed in a very short space of time. If examined today and found with surface unbroken, it may be almost ready to break down, may break tomorrow and in a week all the disorganized tissue behind is crushed or dissolved out and a distinct cavity is found. The rapid yielding when it does begin to go is the occasion of some surprise when the operator finds a considerable hole where a week before floss silk and the explorer would pass the spot without catching or indicating anything wrong. The same way an occlusal layer of enamel adjacent to a proximal cavity or defect will suddenly break down under mastication, and

the tongue will soon find a large cavity there, where a few moments before there was no indication of one from any casual observation. Of course decay had long been undermining it, so the old adage holds good, "Delays are dangerous."

It is unquestionably the duty of the dentist, when occasion demands, to make a most thorough and complete examination, and call the attention of the patient to every defect and note it down with date for future reference, and if the patient is inclined to put off operations in whole or in part, give such advice and urge such care and watchfulness on their part that the responsibility for teeth failing will rest with them.

Some of our patients who, having confidence in us, come with regularity for attention, would think us derelict in our duty and entitled to severe censure if their teeth so often subjected to our care suddenly developed large defects that we had overlooked by not being thorough in diagnosis.

Explorations should be made with a fine sharp probe or explorer bent to convenient shape near the point. This instrument should be tough and springy, yet stiff enough to be properly directed. When cavities between the teeth may not be found with this instrument, aided by the mouth mirror and reflected light, unwaxed floos silk should be passed between the teeth and drawn back and forth. If the silk begins to catch and drag, we may be sure that it has encountered the rough or sharp edge of a cavity in one or both teeth. When we are not fully satisfied of conditions between two teeth a wedge or separator should be used to press them apart slightly so that with a reflected light a visual inspection may be made. This wedging, being very uncomfortable and even distressing, is, of course, not used successively between all the teeth if we can satisfy ourselves without.

Cavities in the occlusal of molars and bicuspids are obscured to visual observation, if small, by the saliva filling the sulci, and though the explorer will no doubt find them, it is a satisfaction to see, and drying the tooth makes them visible.

Through all examinations the mouth mirror plays an important part, or should, in directing the light into dark and hidden recesses, and frequently the reflected light lightens up the translucent tooth and brings out the shadow of decay; though in this test it should be borne in mind that fillings also show a shadow, and the operator must determine if it is a filling before trying to break into it.

The electric mouth lamp is another splendid aid to diagnostic effort in the mouth. Where the proper outfit can not be installed on an electric circuit, very satisfactory ones may be obtained with small and inexpensive storage batteries, and will last many months for such occasional work. The cost of either outfit is not expensive. Such a lamp is a fine thing to diagnose or detect antral troubles if placed in the mouth with lips closed and the room darkened. An umbrella held before the patient to shut out the direct light answers very well in place of closing window blinds.

With the lamp in the mouth in the darkened room the whole face of the patient is lighted up and any accumulation of pus or turgid substance in the antrum shows very plainly by distinct shadow through the cheek.

Examinations of the teeth should embrace as well other lesions of the mouth that need the dental surgeon's care.

(To be continued.)

ORIGINAL CONTRIBUTIONS

TOOTHSOME TOPICS.

BY R. B. TULLER.

Well,
Oi've been
To the dintist;
An' Oi've had me snags drawn, ivery wan.

'Twas snags they were an' no good to annyone; an' akin' me loik a wash-day backache, only more intinse.

It was a divil av a toime Oi had wid that man! An', agin, it wasn't so bad in the end—not fer me, though the dintist he do say Oi'm too handy wid me fut.

"Shure, Docthor, man," Oi sez, when Oi wint in, "Oi'm ascared of ye, so Oi am."

"Ye air?" sez he. "Well, thin, phwy did yez come here, Mrs. Gilhooley?" he sez. "Shure Oi'm no boogy-man," sez he.

"Oi know, Docthor," Oi sez, "ye haven't got boogy-man on yer sign at the dhoor, but ivery hair av me head is thryin' to stand up straight whin Oi luk at ye."

"Is that so?" sez he, "For phwat did ye come? Phwat can Oi do for yez?" he sez.

"Oi kem," sez Oi, "to get me ould snags dhrawn out, an' to get some new wans put in," sez Oi; "but Oi'm that scared Oi can hardly tell ye," sez Oi.

"Don't worry, Mrs. Gilhooley," sez he, "Ye kem to the roight place, m'am. Oi'm the man that can do the thrick, an' aisey," sez he.

"Can ye get 'em out widout hurtin?" sez Oi.

"That's aisey," sez he.

"But ye air a small man," sez Oi. "Ye don't look sthrong."

"Ha!" sez he; "Look at me arum," sez he. "Oi can pull the jaw aff ye," sez he.

"Ye cud," sez Oi, "so ye cud. 'Tis that I'm afeard av. Oi don't want me jaw pulled aff," sez Oi.

"Oi cud, but Oi wouldn't," sez he. Oi've got too good sinse," he sez, "to lose me job av puttin' in the new teeth. Ye couldn't wear teeth widout a jaw, Mrs. Gilhooley," he sez.

"No," sez he, speakin' furdher. 'Oi'll pull yer teeth, Mrs. Gilhooley, an' yez won't know a thing about it," sez he.

"G'wan, man!" sez Oi; "yez can't hynotize the loikes av me wid yer blarney, Mr. Dintist," Oi sez.

"Get into me chair," sez he.

"Not on yer loife," sez Oi; "Oi knew yez!" sez Oi. "That's the divil's chair," sez Oi, "the divil's own contrivance. Look at the iron! Ah, ha!" sez Oi, "wance in there an' 'twould close up an hould me fast, an' thin yez would begin yer murdherin'. Not on yer loife, Mr. Dintist. Oi'll sit where Oi am. This rockin' chair do be good enough fer me," Oi sez; "Oi'll sit here."

"No ye won't," sez he, "ye'll go home, so ye will. If ye kem to have yer teeth out, Mrs. Gilhooley, sit in *this* chair an' have thim out. Sit in this chair," he sez, "an' nawthin will haarm ye. Me toime is money, an' ye air foolin' it away on me," he sez.

"Get in me chair," he sez, "an' Oi will give ye gas, an' ye'll go to sleep for a few moments, an' phwen ye wake yer teeth will be out, an' ye'll not know a thing about it," he sez.

"Oh, ho," sez Oi, "now phwat honey talk air ye givin' me, Mr. Dintist-man?" Oi sez. "Gas, is it? Gas? Do ye want to be axphyxicatin' me? Swally gas into me lungs! G'wan, man! Oi didn't kem over yistiday!" Oi sez.

"Oh," sez he, "it is not 'luminatin' gas; 'tis laughin' gas Oi will be givin' ye, Mrs. Gilhooley."

"Laughin' gas!" sez Oi, "laughin' gas! Well, Oi've lived in Chicago twinty-sivin years, an' Oi never heard anny gas laugh yet," Oi sez. "Oi've heard it *smell,* 'twas that bad. Phwat air ye givin' me, Mr. Dintist?"

"Well," sez he, "Oi'm not givin' ye annything—but me toime. If yez will sit in me chair Oi will explain the whole thing to ye. 'Tis aisy and simple."

Me, Mary Ann Gilhooley! Howly Saints! Oi thot Oi would as soon sit in an automobilly wagon as to sit in a divil-chair; but, be gorrah! before Oi knew it he had me in. Thin he touched a spring wid his fut an Oi was tilted back that quick Oi thought Oi was goin' over back on to me head. Me fut wint up in the air an' hit a wiggly

table thing he had befront av me, there was a crash, an' more things wint on the flhoor than ye could count. An' me? Oi was schreamin' bloody murdher. An' the dintist? he wus takin' the name of God in vain, so he wus. Oi was scared out av me loife, an' he was made as a hornet's nest, so he was.

Oi couldn't get out av the divil-chair wid all the kickin' Oi could do. Thin he swung away the broken table and put his fut on another spring, an' here was me, chair an' all, goin' up in the air. Be gorrah! but Oi kicked an' schreamed.

Thin the dintist, he sez, sez he, "Woman, hould yer tongue! an' hould yer feet. Yer not lady-loike, the way ye air actin'. Put yer feet down where they belong."

"It is on the flure they belong," Oi sez. "Let me put thim there," Oi sez, "an' Oi'll soon be far from here."

Wurra! wurra! What a toime! "Is *this* gas?" Oi axed. "Oi've had enough," Oi sez. "Cork it up!" Oi schreamed; "shut it aff! Oi do be wantin' to go home," Oi sez.

"Quiet yourself; quiet yourself, Mrs. Gilhooley," sez the dintist; "ye have not heard nor swallyed anny gas yet. 'Tis foolishness has hould on ye. Stop this nonsense and put this tube to yer lips, so; breathe full, an' I'll wager ye'll soon hear the laughin' gas."

Thin he got that familiar he tuk hould av me nose an' pinched it. "Lave go av be dose," sez Oi; "Oi'm insulted!"

"It's part of the operation," sez he.

"There's nothin' th' mather wid be dose," sez Oi. "Lave go!"

"Oi want you to breathe through your mouth," sez he.

How it was, Oi dunno, but Oi did as he tolt me. "It is cracklin' in me head," sez Oi.

"Hush," sez he, "an' listen. It will be laughin' very soon," sez he.

But 'twas me that was soon laughin'. That divil-chair began to rise an' go up, and up, and up; but divil a bit did Oi care. It turned into wan av thim air-ships, an' away we wint sailin' up in the sky, an' me laughin', and singin' and feelin' as gay as a bird. "Oi'll go an foriver," Oi sez to mesilf. "Oi loikes it," Oi sez. "No more waddlin' around on fut fer Mary Ann," Oi sez. "Oi'll swoop down an' pick up Pat an' the childer," Oi sez, "an' thin we'll make a tower av the whole worruld, an' "—

"Come, now! Come, now! Don't be spittin' blood all over yer-

silf, Mrs. Gilhooley," Oi hears the dintist say. "Come down to earth once more an' 'tend to business."

"Lave go av me air-ship," sez Oi. "To botheration wid you! Who pulled me down?" sez Oi.

"Oi pulled yer teeth," sez the dintist.

"You pulled phwat? Oh! phwat's the matter wid me anny way? Am Oi havin' a himorrhage? Wurra! wurra! Phwat is this anny way?" Oi sez.

"Ha, ha!" sez the dintist, "you didn't feel a thing, did you, Mrs. Gilhooley? Your teeth are all out. There they air, ivery wan in the basin."

Well, I scurried me tongue around me mouth an', praise be to God, havin' me six sinses, there was not a snag left. When he tuk 'em, how he tuk 'em, and phwat he tuk 'em wid, Oi don't know; but there they were, a baker's dozen av them in the basin, an' me mouth was impty.

On a Chuesday Oi'm goin' to have me new teeth, an' on a Wednesday Oi am goin' to have me fortygraft taken wid me new teeth showin'. Oi wunder do the fortygraft man give gas? Maybe he do. Well, he can't fase me! Oi paid the dintist tin dollars fer his gas an' broken furniture—two fer the gas, eight fer the kick—an' me toe not well yet, an' there's to be twinty fer the teeth.

Begorra! 'twas worth it! 'Twas better than a wake wid plenty av whiskey. If the fortygraft man do give it, thin me for the gas wance more. Hooroo!"

(Topic every month.)

NOTICES OF MEETINGS

NATIONAL SOCIETY MEETINGS.

American Society of Orthodontists, New York, December, 1906.

Institute of Dental Pedagogics, Chicago, December 27, 28, 29.

National Association of Dental Examiners, Atlanta, Ga., September 14, 15, 17.

National Dental Association, Atlanta, Ga., September 18.

NATIONAL DENTAL ASSOCIATION.

The tenth annual session of the National Dental Association will be held in Atlanta, Georgia, commencing Tuesday, September, 18, 1906.

The New Kimball House has been selected by the local committee of arrangements as headquarters, where all general sessions of the association and of the sections will be held. The rates per day at the New Kimball House will be, European plan from $1.50 to $4.00; American plan, $3.00 to $6.00, governed by choice of rooms.

The usual railroad rate of one and one-third fare for the round trip, certificate plan, will be arranged for, and definite dates and particulars given later by Dr. J. D. Patterson, chairman of the executive committee.

The general officers and those of the sections, as well as the committee chairmen and their members, have been working hard to provide an interesting and instructive program and a large attendance is expected.

SECTION I.

Section 1 presents the following program of papers for consideration:

"The Present Status of Porcelain Inlays"..... .....John Quincy Byram, Indianapolis

"Orthodontia".....Richard Summa, St. Louis

"A Phase of Art in Prosthesis".....Geo. H. Wilson, Cleveland

"Porcelain".....C. N. Thompson, Chicago

"Setting Crowns and Bridges with Gutta Percha"..... .....L. G. Noel, Nashville, Tenn.

"Orthodontia".....Victor H. Jackson, New York
"Orthodontia".....Calvin S. Case, Chicago
"The Inevitable Outcome of Crown and Bridge Work".....
.....Parmly Brown, New York City
"General Practice".....W. Leon Ellerbrook, Salt Lake City

B. L. Thorpe, Chairman, St. Louis, Mo.
D. O. M. LeCron, Secretary, St. Louis, Mo.

SECTION II.

Section 2 presents the following program of papers for consideration:

"Manual Training an Essential to Dental Education".....
.....Burton Lee Thorpe, St. Louis
Subject not given.....Geo. S. Vann, Gadsden, Ala.
Subject not given.....Clarence J. Grieves, Baltimore, Md.
"Prosthetic Nomenclature".....Geo. H. Wilson, Cleveland
"The Nomenclature of Materia Medica and Therapeutics"....
.....A. H. Peck, Chicago
'Operative Dentistry".....H. H. Johnson, Macon, Ga.

Howard E. Roberts, Chairman, Philadelphia, Pa.
C. S. Butler, Secretary, Buffalo, N. Y.

In one of the general sessions, Charles McManus, Hartford, Conn., chairman committee on history, will present an illustrated paper on "The Remarkable History of the Profession and the Splendid Character of the Men of the Past Who Helped to Build It Up." A. W. Harlan, New York City, will present a paper on "The Blue Light and Heat as Therapeutic Agents."

The committee on oral hygiene promise an interesting summary of their work, illustrated methods of teaching the science to both dentists and laymen, essays, resolutions and the report of the committee.

J. P. Corley, Chairman, Greensboro, Ala.
F. W. Stiff, Secretary, Richmond, Va.

We are promised a large and interesting list of clinics, and they will be held in one of the dental college buildings. Announcement of the list and where they will be given will appear later.

Thomas P. Hinman, Chairman, Atlanta, Ga.
C. L. Alexander, Secretary, Charlotte, N. C.

It is the earnest desire that there shall be a large attendance of

members and delegates, so that the committee to devise ways and means to own and control a dental journal may feel encouraged to launch such a scheme as will at once meet approval and hearty support, and the association has members enough to guarantee the project.

Many other features for a new era of success in the National Dental Association can be mapped out at the Atlanta meeting if only we have a sufficiently large and enthusiastic gathering of the members of the profession to make it appear worth while.

M. F. Finley, President, Washington, D. C.

FRATERNAL DENTAL SOCIETY OF ST. LOUIS.

The forty-first annual meeting of the Missouri State Dental Association was held June 5-6-7 at Springfield, Mo.

An important feature of the meeting was the adoption of a plan for organizing societies throughout the state. The following officers and committees were elected: President, F. G. Worthley, Kansas City; first vice-president, J. W. Hull, Kansas City; second vice-president, J. B. McBride, Springfield; recording secretary, H. H. Sullivan, Kansas City; corresponding secretary, E. P. Dameron, St. Louis; treasurer, J. T. Fry, Moberly.

Board of Censors.—J. L. Bridgeford, Springfield; H. Boatner, Boliver.

Committee on Ethics.—A. M. Tutt, Liberty; J. F. Austin, St. Louis; F. W. Franklin, Kansas City.

Committee on Publication.—Otto J. Fruth, St. Louis; H. F. D'Oench, St. Louis.

Committee on New Appliances.—H. B. McMillen, Kansas City.

Committee on History.—B. L. Thorpe, St. Louis.

Committee on By-Laws.—J. W. Hull, Kansas City; H. H. Sullivan, Kansas City; J. D. Patterson, Kansas City.

The forty-second annual meeting will be held in Kansas City.

E. P. Dameron, Corresponding Secretary.

MISSISSIPPI DENTAL ASSOCIATION.

The thirteenth annual meeting of the Mississippi Dental Association closed Friday, June 8, 1906, the most successful meeting in the history of the association. Gulfport proved to be a most enjoyable place for the meeting.

The following officers were elected for the next year: President, Dr. L. B. McLaurin, Natchez; first vice-president, Dr. L. A. Smith, Port Gibson; second vice-president, Dr. J. H. Phillips, Meridian; secretary, Dr. E. Douglas Hood, Tupelo; corresponding secretary, Dr. W. H. Reaben, McComb City; treasurer, Dr. C. C. Crowder, Kosciusko.

The association will go to Meridian next year and will meet during the month of May.

Great plans were suggested at the meeting whereby the Meridian meeting can be made still better, and it is the intention of the officers to try and eclipse anything ever before offered by any southern state.

For information at any time address the secretary, E. Douglas Hood.

THE AMERICAN DENTAL TRADE ASSOCIATION.

The American Dental Trade Association met in annual session at Frontenac, N. Y., June 18-19. The meeting was well attended. The following officers were elected for the ensuing year: Lee Smith of Pittsburg, president; A. H. Marshall, Des Moines, first vice-president; Frank Ritter, Rochester, second vice-president; C. Layton Greer, Philadelphia, secretary; and I. Hettinger, Kansas City, treasurer. The next meeting will be held in Chicago in June, 1907.

OREGON STATE DENTAL ASSOCIATION.

The annual meeting of the Oregon State Dental Association was held in May. An interesting program was furnished. Election of officers resulted as follows: Dr. G. H. Nottage was elected president, Dr. A. P. Watson vice-president, and Dr. Jean Cline secretary and treasurer. The members of the new executive committee are Drs. George Marshall, Wadsworth and Holbrook.

The session was to have closed with an elaborate banquet for which funds had been raised, but the association voted the money to the relief of fellow practitioners in San Francisco, and dispensed with the banquet.

MISSOURI STATE DENTAL ASSOCIATION.

The Missouri Dental Association closed its session by choosing Kansas City as the next place of meeting and electing: President, Dr. F G. Worthley, Kansas City; vice-presidents, Dr. J. W. Hull of Kansas City and Dr. A. S. McBride of Springfield; recording

secretary, Dr. H. H. Sullivan, Kansas City; corresponding secretary, Dr. E. P. Dameron, St. Louis; treasurer, Dr. L. T. Frey, Moberly.

SOUTHERN WISCONSIN DENTAL ASSOCIATION.

After electing the following named officers, the Southern Wisconsin Dental Association adjourned June 1 at the Hotel Pfister in Milwaukee to meet next year at Lancaster: President, Dr. C. F. Rodolph, Muscoda; first vice-president, Dr. B. C. Campbell, Lake Geneva; second vice-president, Dr. E. H. Webster, Lake Mills; secretary, Dr. C. W. Coliver, Clinton; treasurer, Dr. W. G. Hales, Mineral Point. Thirty new members were received during the Milwaukee meeting.

NORTHERN OHIO DENTAL ASSOCIATION.

The Northern Ohio Dental Association opened its forty-ninth annual convention and exhibition June 6 at Cleveland. Members of the association number over 400. A clinical lecture was given by Dr. J. Q. Byram of Indianapolis, and papers on technical subjects were presented by Dr. L. E. Custer of Dayton and Dr. L. E. Smith of Cincinnati.

The following officers for the ensuing year were elected: President, Dr. J. R. Owen of Cleveland; vice-president, Dr. O. A. Allen of Toledo; corresponding secretary, Dr. D. H. Ziegler of Cleveland, re-elected; recording secretary, Dr. J. K. Douglas of Sandusky, re-elected.

IDAHO STATE DENTAL ASSOCIATION.

The Idaho State Dental Society met at Nampa and after a successful meeting elected the following officers for the ensuing year: President, Dr. C. K. Joyner of Nampa; vice-president, W. C. Minier of Boise; secretary, A. A. Jessup of Boise; treasurer, A. W. Cate of Boise. Boise was chosen as the place for holding the next annual meeting.

TEXAS STATE DENTAL ASSOCIATION.

The twenty-sixth annual session of the Texas State Dental Association was held at Galveston, June 15-17. The result of the election of officers was as follows: President, Dr. R. D. Griffis of Paris; vice-president, Dr. A. A. Dyer of Galveston; second vice-president, Dr. Charles H. Edge of Houston; secretary and treasurer, Dr. G. Waller Staples of Dallas; curator of museum, Dr. A. F. Sonntag of Waco. The next annual meeting will be at San Antonio.

CHICAGO COLLEGE OF DENTAL SURGERY.

The twenty-fourth annual exercises of the Chicago College of Dental Surgery were held Tuesday, May 29th, at the Garrick Theater. Degrees were conferred by Truman W. Brophy, M. D., D. D. S., LL. D. The doctorate address was delivered by George E. Vincent, Ph. D., of the University of Chicago, and the faculty address by W. H. G. Logan, M. D., D. D. S. Following is class roll:

Alrick, Jewell Abrim
Aaron, William Edgar
Allen, Charles Ewing
Allen, Henry Wilson
Ambrose, James Lester
Alexander, James Selby
Barber, Roy Ellsworth
Bolsinger, George Elliott
Best, Elmer Samuel
Boudreau, George Clorisse
Burgess, Henry Weston
Cary, Walter Bernard
Cassidy, Thomas Joseph
Clark, Haze Richard
Clark, Samuel Jackson
Coram, James Weldon
Coram, James Weldon
Coolidge, Edgar David
Cummings, Leo Patrick
DeRiemer, Albert Edward
Duguid, Ralph Orr
Duncan, John Robert
Dolby, Stephen Garfield
Elmer, Gertis Dresser
Emerson, Arthur Garfield
Fallis, Ward Vernon
Fitzgerald, William Thomas
Goodridge, Thomas Arthur
Godfrey, Glenn Eugene
Gilbertson, Theodore Ludwig
Gibbs, Sylvester Milton
George, Alfred Perry
Knox, John Thomas
Kaschau, Henry Charles
Keenan, Paul Oscar
Knights, Earl B.
Lausted, George William
Lape, Joshua Barnes
Lange, Fred Charles
LeFebre, Richard Dodd
Le Argent, William Bainbridge
McKelvey, Wilbur Hugh
Miner, Arthur Robert
Mahood, Lewis Milton
Mortonson, James Claussen
Muntendan, Jan Hendrik
Midkiff, Clyde Dee
Parr, William Ralph
Peterson, Charles William
Platts, Lewis Arthur Jr.
Peebles, William Warrington
Raedel, Evald Henning
Rosenberg, Harold
Schmidt, Clarence Eugene
Selleck, Charles Herbert
Seegmiller, Junius
Skiff, Ernest Gage
Stover, Morton Ralph
Stoner, Wilfred Mitchell
Sullivan, David Lawrence
Sinclair, Joseph Malcolm
Treiber, George Raymond
Taggett, Wesley William
Thomas, William Eugene

Hall, Robert Stewart
Hanson, Elmer Charles
Hansen, Thomas Chris
Hardison, Joel Barksdale
Hajicek, John Edward
Hocking, William E.
Ibuka, Shigeo
Jensen, Adolph George W.
Voorhees, Martin Myron
Vasumpaur, Rudolph Robert
Wilson, Ralph Ellis
Woolley, Edward Mason
Weinshenker, Lewis Tobias
Wildberg, Jacob Leopold
Williams, Howard Irving

COLLEGE OF DENTISTRY, UNIVERSITY OF ILLINOIS.

The fifth annual commencement exercises of the University of Illinois was held at Steinway Hall, May 31, Dean B. J. Cigrand presiding. Degrees were conferred by Edmund Janes James, president of the university. The doctorate address was delivered by E. G. Covley, LL. D., superintendent of public instruction, Chicago. Class roll follows:

Bloomenstiel, Mose Frank
Brady, Elizabeth Neil, M. D.
Bronstein, Benjamin Joseph
Clinite, Floyd Ellis
Coleman, Guy Thomas, M. D.
Cree, Charles Garfield
Danforth, Earl Hartland
Desser, Louis Bernard
Dyblie, John Helmer
Ertel, Herman Henry
Frey, Joseph Clark
Gill, Walter William
Helmick, Otto W.
Holden, Walter Horace
Jent, James Abram
Landon, Orrin Frederic
Lotreck, Frank
Marquis, Robb Lyle
Marsh, Clark Willard
Mason, Clarence Joseph
Mauermann, Hugo Chr.
Miller, Louis
Meek, Clarence B.
Mortenson, John Ole.
Mundell, Ralph Rogers
Nelson, Theodore Martin
Plummer, Joseph Henry
Preusker, Gustaf Alwin
Rockfellow, John Albert
Rogers, William Joseph
Shaffer, Walter Henry
Simmons, Everett Lee
Stocker, Carl George
Taylor, Elmer Eugene
Tym, William Bradford
Thompson, William
Vita, Valerian Julian
Walker, Thomas Raymond
Waterman, Glen Burrows
Wimmer, Wallace Alexander
Worthington, Chester Allen
Worthington, Sam Lester
Wright, James Alexander

ABSTRACTS AND SELECTIONS

THE ELECTRICAL EFFECT OF BREATH AND FOOD UPON THE HUMAN ORGANISM.

BY ALBERT J. ATKINS, M. D.,
PROFESSOR PHYSIOLOGY, CALIFORNIA MEDICAL COLLEGE; EX-PRESIDENT SAN FRANCISCO COUNTY SOCIETY OF PHYSICIANS AND SURGEONS.

[An Address Delievered Before the San Francisco Dental Society.]

Mr. President and Members of the San Francisco Dental Society: By invitation of your worthy president I have the honor to address you upon this occasion. However much pain it is to meet a dentist under ordinary circumstances, tonight offers one of the rare instances when it becomes a pleasure. I am pleased to present my ideas to you, for I feel that there is a sacred bond between our professions—that bond is the welfare of humanity.

The subject about which I am to talk to you is one of vital importance, especially that part of it which deals with breathing. Man can live quite awhile without food; he may live without teeth, but where is the person who can live without breath?

In this electrical age, with its marvelous discoveries and advancements in all departments of science, it becomes almost self evident, that whatever the vital essence of the life principle may be, its action follows the laws which govern electricity and magnetism.

About three years ago, when I read my first paper on this subject before the medical societies, some of my audience took the opportunity for a quiet nap; others laughed at me for presenting an absurdity; all of this, naturally, did not tend to make me feel very comfortable. I answered my contemporaries in a spirit of prophecy, saying, it will not be five years before these very ideas will cause all the text books of physiology to be rewritten. It affords me great pleasure to inform you that I have in my possession a copy of the "American Text Book of Physiology," red hot from the press, in which its author has devoted many pages to electrical phenomena

and electrical currents in the human system. In my first papers I quoted this author extensively to sustain my hypotheses, believing him an advanced thinker and liberal man. Later, when I proved the facts by actual experiments upon living animals, I sent the author a report of all my work, believing that he would rejoice in the discoveries made. Although, in rewriting his book he has devoted considerable space to electrical phenomena, there is no mention of these experiments. Strange, is it not? Real success, however, does not consist in having one's name paraded in the limelight, but in the fact that progress has been made for the world. I am pleased that the "American Text Book of Physiology" has been rewritten to satisfy the demands of a progressive American public, and I believe that this same American public will ultimately realize the influence which has caused the rewriting of its text books.

I have cause to thank a liberal press for its courtesy in disseminating these new ideas and many students and thinkers in all lands who have sent me words of encouragement. Especially among these is one whose influence has been an inspiration to me and whose words of commendation have helped me in my efforts to establish truth. I can add no vestige of honor to his name, for it stands alone in a class by itself—I refer to the immortal Luther Burbank.

When I think of what Luther Burbank has accomplished by directing the life-forces within the plant, and realize what may be done by directing these same life-forces in the human organism, I feel like urging the whole world to awaken to the great possibilities which await development in this field of thought.

The forces that blend so harmoniously in the plant, shaping its elements into beauteous expressions of form and color, are the same in principle as those that build the temple of the human organism. The human body is a beautiful thing; it is something to be admired and should not be despised, as much of our religious philosophy has taught to do, in the past. It is a glorious temple and should be full of light, the light of intelligence which should guide us in all that we think or do in life.

In all countries scientists are working day and night, trying to solve the great problems of life; nearly all of them are working with chemistry only as a basis. I think they are making a great mistake in thus limiting themselves to this one phase of human

knowledge. They cling tenaciously to chemistry in their study of the cell, yet every biologist knows that chemicals destroy life in the protoplasm. We must not forget the environment of the cell in our study of the life principle; environment may mean the effect of all the forces of the universe upon this single center of activity which we call a cell. Environment may mean the ocean in which the sea urchin exists, the chemicals held in solution by its waters, the alternate effect of darkness and light, heat and cold, the change of seasons or the flow of ocean currents. Any of these conditions, all of which affect life, lead directly into the consideration of universal forces which are infinite in their effect even upon a single center or cell; therefore, whoever tells you that he is just about to solve the great mystery of life's origin, by means of chemistry only, shows himself to be merely in the kindergarten of human knowledge. We must be broad in our analysis of life's manifestation if we would understand its laws or comprehend its infinite modes of expression.

Electrical scientists know that wherever chemical action occurs electrical waves are started, this is a mode of motion of universal energy radiating from a certain center of activity and is known as electrical energy or electricity. What life is in absolute essence, I do not assume to teach, but a careful study of nature's manifestations undoubtedly reveals the fact that life is activity and not substance; while it depends upon substance to express itself in form, yet in its last analysis substance itself is reducible to energy.

Energy everywhere manifests its activity under the same laws that govern electricity and magnetism, hence the manifestation of life energy in the human body is upon the electrical plan.

Physiologists have been slow to accept the electrical theory because they have been so limited by the *materialism* of chemistry that they failed to see the *effect* of chemistry which is electrical activity, although it is generally accepted that chemical affinity and electrical affinity are identical.

With the fact that chemical action liberates electrical energy firmly fixed in our minds let us proceed to a study of the natural phenomena taking place in the living organism.

Assisted by Drs. Emma A. Lewis and H. W. Hunsaker, both of this city, I have been able to demonstrate the fact that electrical currents are found in every organ of the living body. I will not

enter into the detail of these experiments, as they have already been published by the scientific and secular press of the world. That the living organs of the human body act electrically is no longer a theory but an established scientific fact, and in the name of human progress I demand a hearing for such fact, of the scientists of the world. If any man doubts the truth of this statement, the experiments are easily made, let him try them and be convinced of their merit.

As a result of the facts brought out by our experiments, we look upon the whole living organism as a complicated electrochemic machine of a very high order, with many electrical circuits and much delicately arranged apparatus, all of which is governed by exact laws which are those of electricity and magnetism.

We believe the brain and nervous system to be primary conductors and distributors of the electrical life energies of the human organism. The brain and nerves would be of no avail if there were no electrical life currents generated. In order to produce mechanical motion or other phenomena every electrical current must have a complete circuit. We believe the principal office of the blood is to furnish a ground circuit for the return of every electrical impulse which passes through the nervous system of the living body. The blood holds in chemical solution the salts of the earth; it contains the most refined products from all the kingdoms of nature; indeed, the blood has been properly called the river of life. Each red blood corpuscle contains fifty-five per cent carbon and one per cent of magnetic iron; also other elements. This chemical combination causes every blood cell to be a complete electro-magnet, which attracts and grounds every electrical impulse of the whole organism. Thousands of years ago the Hindus wrote, "Breath is life;" it was true then, it is true now.

In the lungs of the living sheep we measured, by means of a galvanometer, an alternating current of electrical life force. The fact that this current was alternating shows that it flows both ways, i. e., to and from the lungs and brain, with every inspiration and expiration of the breathing process. Here is the beginning of the circulation of life.

This current was measured in the air-chambers of the lungs outside the blood stream; the existence of this current at this point proves it to be the point where chemical action takes place. The university text books of the world teach that this chemical action

takes place on the inside of the membrane, which confines the blood stream in the lungs. This membrane, which separates the air from the blood in the lungs, is but a twenty-thousandth of an inch in thickness, so you can see that our philosophy is physically very close together, but there is a difference—it is all the difference in the world. I am willing to wait a few more years, but during that time I expect to see many more university text-books rewritten, because the present theories of physiology are entirely inadequate for the solution of the great problems of life.

The positive current of electrical energy generated in the lungs by the inbreathing of the oxygen of the air would naturally follow the best conductors, which are furnished by the sensory nerves that supply the lungs. These nerves conduct these currents directly to the nerve centers of the cerebellum; from thence they are transferred to other centers in the medulla oblongata, finally returning by the spinal cord and motor nerves to be grounded in the blood cells. The mechanical effect of this returning motor impulse starts in action all the organs of the body. The return of this negative motor impulse to the blood of the lungs would cause chemical rearrangement in the elements of the blood of the lungs, changing its color by reason of the discharge of electricity and causing retrograde elements, such as carbon and hydrogen, to be expelled by excretion through the glands of the lungs at the negative pole of the circuit. It is acknowledged by physiologists that the lungs throw off five hundred grammes of carboniferous matter every twenty-four hours, in the form of carbon-dioxide and watery vapor, which consists of oxygen and hydrogen. In this manner we can account for every atom of oxygen which enters the lungs in the waste material thrown off by the lungs in expired air; furthermore, it accounts for the positive electrical currents which we have demonstrated to exist at this point.

The capillaries are at the periphery of every system of blood vessels; capillaries are those infinitesimal little blood vessels that twist and turn in every dircetion forming a complete induction coil between the arteries and veins. The spaces are so small in the capillaries that the minute blood cells are forced to enter them in single file in order to pass through the narrow apertures; here all the force arising from the mechanical pumping of the heart is lost, and the power which drives these small cells or magnets through the capillaries into the veins is the return current of that electricity which is

generated in the lungs. Nor is this all; those who have studied the action of the dynamo know that a primary current discharged or grounded in an induction coil produces a more powerful secondary current in a secondary circuit. The capillaries and blood cells act as an induction coil charged by the original current from the lungs; in the capillaries begin a secondary system of sensory and motor nerves which constitute the great sympathetic nervous system, which has more than fifty important nerve centers outside the brain; these centers, such as the solar plexus, etc., are to contain gray matter. This secondary or induced current charges the entire sympathetic nervous system with its mechanical electro-motive force every time we take a breath. This induced current must alternate between the great poles of the organism twice to once of the current generated in the lungs by breathing. The great major electrical poles of the human body are in the skin or periphery and in the brain centers. This force of an induced current passing between the brain and principal centers of the sympathetic nervous system must strike the alternate sides of the heart twice to every single breath, hence the four alternate contractions and relaxations of the heart to one breath. Here is the plain cause of the heart action and also of all the living phenomena of the human system. Here is the power which charges the nervous system with life motion; here is the power for which Harvey sought when he discovered the circulation of the blood. Here is the power which explains all life phenomena within the human system and opens the way to an understanding of our relationship with the infinite forces of the universe. Here is the fundamental principle upon which the physiology and philosophy of the future must rest.

Think of the possibilities which this line of thought opens to us; think of intelligently directing the currents of life through the influence of a trained will. It places a power in the hands of man equal to that of the gods of the past. Think of the possibilities in the cure of disease, or still better, think of the higher state of health that may be maintained, if the masses learn to understand and practically apply this knowledge. Every breath is an influx of life, by proper breathing we may animate every cell of our bodies with the electrical breath of life. Every doctor in the world should be a teacher, instructing the people in the laws of life, yet he should also ever be a student of nature, keeping close to her in all his ways.

We have many colleges for the study of medicine and of microbes, yet disease is on the increase and hospitals and asylums are constantly multiplying; even the doctors do not know how to keep themselves well. The world is almost insane on the subject of microbes and has no time to study the causes which permit the microbes to grow. What the people of today most need is an abundance of fresh air and a sufficient supply of wholesome, pure food. Food is an important source of energy in the human body because in it is stored the magnetic principle of life. The entire universe is alive because of magnetic and electrical action; everywhere there must be cause and effect, positive and negative conditions, male and female principle, in order to have expression, form and action. In the human form we find a perfect epitome of all that exists in the universe at large; the forces that cause the living organism to vibrate and pulsate with life are the same in principle as those which cause the mighty planets to rotate in perfect order in the heavens.

The scientists of the earth are beginning to recognize that what we call matter is nothing other than polarized energy; therefore, when we take food substances into our stomachs, we do so for the energy that is stored in it, even more than for the building material of the physical body. The energy which is released from food passes through the nerves in magnetic waves which carry on their bosoms the effects of that substance past environment, to be again sent forth in higher form; as before stated, life is activity, and though dependent on substance for its manifestation, it is itself intelligent activity. From the time food is taken into the mouth it begins to pass through a form of chemical reduction which is continued all through the digestive apparatus as a process of refinement as well as reduction, and it passes out to the system in magnetic waves that sustain and hold in continuance the life forces.

In our experiments on the stomach of a healthy man, we demonstrated the existence of a current of electro-motive force of ten millivolts in every inch square of the stomach; this current of electricity causes the glands of the stomach to secrete acid and alkaline fluids, according to the necessity of the conditions. Furthermore, by its resistance, it prevents the digestion of the stomach by its own juices, which answers a question that has puzzled the physiologists who have taken a purely chemical view of life. This current starts and maintains the whole electro-chemic process of digestion, because of the

law of action which is that electricity causes chemical action, and chemical action causes electricity; consequently, we can see that as soon as this current begins to flow from the brain to the stomach, through the pneumogastric nerve, chemical action must ensue and this chemical action releases the stored energy of the food structures which passes out in magnetic waves. This released magnetism flows back to the brain through the sensory nerves giving to the mind the calm satisfaction of knowing that nature's requirements are met and the life forces are maintained.

Nerves are so constructed that they will only receive waves of certain vibrations, consequently, we find that certain nerves respond to an acid wave, while others respond to an alkaline; this accounts for the different action of drugs upon certain organs and furnishes the key to a scientific basis of medicine; herein are great possibilities, but I have not time to dwell upon this subject at the present time. The great builder of the human temple is the energy of atmosphere which we breathe with the magnetic energy which we gain from eating food; one is positive, the other is negative; under the influence of these dual forces every form which has ever existed has come into being. The embryonic cell of life is but the interblending of these two forces which are one in principle.

Nature shows us the expression of these forces interblended in every creation; let us awaken to the dawning light of knowledge which is shining all about us in this infinite universe of electric and magnetic force.—*Pacific Dental Gazette.*

THE VARIOUS AFFECTIONS OF THE MOUTH; THEIR ETIOLOGY AND SIGNIFICANCE.

BY DR. LEMUEL ADAMS.

[Read Before the Alameda County Dental Society, December, 1905.]

Prophylaxis, or the prevention of disease, is of such interest and such vital importance that we are more than ever before thoroughly alive to the preventable character of all the allied affections of the buccal cavity; this is due in part to our more complete understanding of their etiology, and when once the lesion or disease is recognized

we are better able to thwart and restrict the remarkable cell activity characteristic of the various bacteria in their warfare for supremacy, and with more gratifying results to both ourselves and our patients. As we well know, the mouth is the most suitable incubator for micro-organisms, the constant temperature, the presence of food debris, dead tissue, and the like all conduce to the nutrition and rapid proliferation of the various bacteria. It has been clearly demonstrated that they are the cause of all the affections, from the ordinary dental caries and necrosis to the not infrequent, but less common, tuberculous node or syphilitic gumma. All of the organisms that have yet been described and isolated, have at some time been found in the mouth, proportionate, however to the cleanliness with which it is kept, and the condition of health of the contained organs. The teeth afford their favorite abiding place, especially when they are defective in numbers, or diseased; it is then we find countless pathogenic and non-pathogenic bacteria.

Asepsis and anti-sepsis in dental or oral surgery are unknown terms, of a necessity they have to be, for the reasons that this human incubator always contains many of the disease producing germs, and to attempt to eliminate them from the margin of the gums, from on and about the teeth, from the folds and recesses of the cheeks, and the floor of the mouth, is an impossible venture, and if it were not for the wonderful resistant properties of the mucus membrane against bacterial invasions, it being even more resistant than the teeth, they would reign supreme, and would result disasterously to the individual concerned. We can divide all bacteria for the convenience of description into two main classes: *First,* the pathogenic, under which head belongs the greatest number of micro-organisms, including the pus producing germs, and *secondly,* the non-pathogenic, including the molds, or fungi.

Of the thirty varieties cultivated and grown by Prof. Miller of Berlin, eighteen proved to be cocci, eleven staffs, one producing the sprilillium of cholera, eight were chromogenic, producing yellow masses in nutrient jelly, and twelve organisms that were later separated by cultivation which developed lactic acid, important as regards dental caries. This was also demonstrated by Arkovy, but in addition to this he isolated the bacillus gangrenae pulpae which was found to possess the power of softening dentine. These bacilli are not rare, occurring in nine and fifty-three hundredths per cent of cases, as

compared with the staphlococcus pyogenes aureus in twenty-three and two-tenths per cent, streptococcus citreus four and six-tenths per cent, bacillus of pyocyaneus nine and three-tenths per cent. Then there yet remains in this large class of pathogenic bacteria, the micro-organisms that produce specific diseases, all of which may be found in the normal mouth—such as of the bacillus of tuberculosis, which occurs in forty-eight per cent of the cases examined, that of syphilis, the diplococcus of pneumonia, found in thirty-three per cent, and as high as fifty-two per cent in the fall of the year, the Klebs Loeffler bacillus of diphtheria found in twenty-two per cent, those of anthrax, glanders, gonorrhoea, typhoid, tetanus, cholera, influenza, plague, cerebro-spinal fever, and of malignant edema.

The protozoa, saccharomyces and streptothrices are included under the smaller and less important division of the non-pathogenic family. Of the protozoa, the two chief examples are the plasmodium parasite of malaria, and the amoeba of dysentery.

Of the saccharomyces the most illustrious in accomplishing harm is the oidium albicans of thrush, which is intimately classed with the large family of yeasts, while the principal streptothrix is the ray fungus of actinomycosis. Any and all of these active cell organisms are notoriously patient when the soil is unsuitable, but let there appear an abrasion, or an erosion of the mucus membranes, or of the teeth, coincident with a debilitated condition of the patient, and then we find a marked activity, a rapid increase in number, and infection local or systemic is very apt to ensue. All are communicable.

Modes of Infection; first, induced, as a result of wounds or ulcerations of the mucus membrane of this cavity. Second, through exposure or suppuration of a dental pulp leading to apical abcess, and eventually terminating in septic poisoning. Third, from absorption of the bacterial products, the ptomaines. Fourth, from swallowing bacteria or their ptomaines, inducing gastric or intestinal disorders. Fifth, from a diseased condition of the mucus membrane, rendering them more susceptible to infection.

A mouth infection, if allowed to progress, means a continuation of this process to the pharynx, the nasal cavities, and their accessory sinuses—the sphenoidal, ethmoidal, frontal, the maxillary, but more commonly than these, the middle ear. Let me cite a case in point, how a fatal termination might have easily been averted; an elderly man, who had been ill but two or three days, was seen at the hospital,

in consultation; he was found in a greatly prostrated condition with a high temperature, a rapid weak pulse, and with more or less delirium present. On examination the right cervical glands were considerably enlarged, and marked tenderness was found over the mastoid process, and then was an acute purulent discharge from the middle ear; this led to an inspection of the mouth and throat where the source of this serious infection could easily be seen. The little that remained of the teeth were filthy roots, and with a consequent gingivitis. The surgeon in charge immediately opened the mastoid cells, affording temporary relief to the patient. Forty-eight hours later his condition again seemed critical, and a septic thrombus of the lateral sinus was suspected. Then the wound was explored, and considerably enlarged, the sinus opened, and thorough drainage instituted, but he rapidly grew weaker, and died shortly after in an unconscious condition as the result of general sepsis. Of the *location of the various affections* of the mouth and its contained organs, the lips come first in importance, and I propose to mention only those that are a menace not only to the operator, who must use all necessary precautions to provide for his own safety, but who must warn his patient, if it seems advisable, so that he may not transmit the lesion to other individuals, however slight and insignificant it may seem. Syphilis affecting the lips is met with in all stages, and is often overlooked; for it is frequently masked by the constant moisture which is present and by the secondary septic inflammations that ensue.

It is interesting to note here, that out of nine thousand and fifty-eight cases that were examined and reported upon by Dr. Bulkley, known to have syphilis, the primary lesion, of canker, in five hundred and seventy-one cases, occurred on the tonsils, seven hundred and thirty-four cases in the buccal cavity, and one hundred and ninety-nine on the lips and gums, making no less than fifteen hundred and four cases within the cavity of the mouth.

With *the tongue* syphilis displays its most characteristic features, with the exception of the primary sore which is seldom met with. Butlin says "There is hardly any affection of the tongue in which the possibility of syphilis should not be taken into account in making the diagonosis." Like the lips, the most common sources of infection are tobacco pipes, spoons, forks and drinking cups which have been used by syphilitic persons. Only recently a doctor told me he was

treating three cases, young men who had lately returned from a hunting trip, each having a canker of the lip, and a beginning mucus patch of the tongue; on inquiry it was found that on one occasion they felt compelled, although amply supplied themselves, but for good-fellowship's sake, to drink from the flask of their guide. He had syphilis in its most virulent form, hence, the infection was easily transmitted. Another case in point, I am now treating a patient, who when first seen, complained of a lump on his tongue, and on examination there was found a well defined gumma of the dorsum the size of a small marble, with a characteristic mucus patch of the margin; under vigorous specific treatment and local applications the gumma rapidly disappeared, but the patch persisted and still persists, and yet if the previous history were unknown to you, very little attention might be paid to this apparently insignificant area, and yet it is highly virulent and thus prolific of danger.

The smoker's patch, generally on the tip of the tongue, can be easily distinguished from location, with its enlarged and prominent papillae. Of the *diseases of the gums* we find expressions of certain constitutional conditions, which are interesting, such as the red line extending along the margin, being well defined, pathogenomic of tuberculosis or diabetes, whereas the blue line equally well marked, is found in plumbism, or lead poisoning. Cankers may be present, also an osteo-sarcomatous growth called an pulis—which originally springs from the periosteum—then involving the gums and appearing as a granulating mass extending up around the diseased tooth. Of the various affections of the jaw of importance in your work, comes first necrosis of the alveolar process about the necks of the teeth, due to a pyogenic infection, commonly known as "Riggs disease" or "pyorrhoea alveolaris" resulting in a chronic suppuration with loss of bone tissue and finally the teeth. The ray fungus of actinomycosis has a special affinity for the jaw and is found frequently among cattle herders, producing the condition known as "Lumpy jaw." During mastication the fungus is driven into some decaying focus in a tooth, where it gradually penetrates into the bone; an ostitis is set up, sinuses are formed, the tumors increase in size and finally fluctuation can be detected. It is rapidly fatal, as secondary foci may appear in various organs, especially the lungs and brain.

The primary lesion of syphilis also met with here, a favorable opportunity being furnished by the injuries and laceration caused by

difficult extractions. Nine cases of infection are reported following the use of forceps, whether due to unclean instruments, or to the condition of the patient, the paper did not state.

In conclusion let me say that the ideal prophylactic method in work in the mouth is asepsis, as nearly perfect as the field will permit, and make your chair and surroundings and operating-room clean. Patients realize what this means and appreciate one's efforts in this direction. We should exercise the same precaution in dressing an abscess as we would a clean incised wound, and the cavity of the mouth ranks first in the number of micro-organisms that it contains—in other words preclude all possibility of introducing foreign bacteria among those already present. Then work with clean hands and instruments that have been boiled just prior to their being used. If we all obey these aseptic laws we justly feel satisfied of our good results—much to the disappointment and chagrin of the ever alert bacterium.—*Pacific Dental Gazette.*

LITTLE THINGS.

BY DR. CHARLES O. KIMBELL.

I am here tonight to speak of Little Things—but as all size is comparative, what shall we select as the little things to be considered; for what is little to us may be immense to the ant, and even men, seen from a distance, crawling across a vast glacier may appear like tiny dots, though the glacier itself appears only as a mere patch of frost on the side of a wrinkle of the skin of the old earth.

As we look closely into this subject we perceive that the big is made up of the little. All organized life, from the giant oak to the man who fells it, is made up of minute cells; all inorganic matter, from the granite mountain to the smallest grain of sand, is made up of atoms almost inconceivably small, yet all are on the one side truly bound into one life, on the other into one mass.

Without descending to the smallest thing of which we can conceive, let us take for our theme the things that seem little to us

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(little organs, little defects, little remedies) or we might take as a text an old saying that has been a help and stimulus to me for many a year: "He that is faithful in that which is least, is faithful also in much." Pleaese note that it does not say "will be" but "is" faithful in much, giving us clearly to see that here at least the little thing really is the large thing, that in the small act we are actually doing the great one; this is not merely a truth in the old saying, but it is a fact of common observation in daily life.

The immense mass of framework of the Brooklyn bridge, with the thronging multitude and great amount of traffic, is supported by four cables, which are made up of bundles of small (No. 9) steel wires; the great office buildings which make our streets dark and picturesque depend for their strength upon a vast number of little rivets.

You may fairly ask, "Why do I bring this before you?" Because our work as dentists concerns one of the smallest of the organs of the body, quite insignificant in size, if compared with a hand or foot, with the heart or liver, even with eye or ear, yet, though small in size, the importance and value of the teeth is very great, for they lie at the threshhold of life, and upon their condition depend largely the health and vigor of the whole body.

Let us then take up our daily work and see in how many ways little things require our best faithfulness. First, in the cleansing of the teeth, or, as we are fond of calling it, "the hygiene of the mouth." After we have removed the larger masses of tartar, we find just under the free margin of the gum very minute particles of tartar (sometimes comparatively large and extending quite far) to remove these and yet not hurt the patient nor wound the gum needlessly we must use very fine, slender instruments which will pass under the gum. Then we must polish the tooth with stick and pumice till it is smooth on every surface even to its actual attachment to the gum, lest these minute particles form nuclei for further deposits. Your attention has been called so much to this lately that I will not enlarge upon it further than to bear my own testimony to the value of such care and the need of making it thorough, which need has been fully recognized by the best men in the profession for fifty years, for these tiny particles of tartar are one of the little things of which I am speaking.

Next comes examination of the teeth. I can not insist too strongly upon the importance of this as it is the key to your whole work,

and here again the value of small instruments is marked. Tiny examiners with blade not more than one-sixteenth or one-thirty-second of an inch long, others a little longer but still slender, will pass between the teeth and into minute defects and reveal that which you ought to know. But what are you seeking for—great holes staring with black eyes at you? Ah, no! These your patient will point out (sometimes with great reluctance). You are on the trail of a secret foe, lurking in crevices and hiding between teeth which seem at first sight as fair and sound as is possible for them to be; but have a care, your tiny instrument must have eyes in its tip, and this must touch every part of the surface of the tooth till you know that there is no roughness, no catch, no crevice, that you have not passed judgment upon. Happy your patient and happy are you if, after such a searching test, you can say, "Nothing need be done."

But, suppose there be trouble, or caries present—let us note that it always begins in microscopic quantities, sometimes at the bottom of an enamel defect, as in the crown fissures of molars and bicuspids, sometimes at the surface of a perfect enamel where two teeth touch, sometimes along the margin of the gum. Generally speaking, wherever food may lodge decay may begin, and the time to meet it is when it is still small in amount but indicating its nature by its method of enlargement. When the molars and bicuspids are just through the gum, even before they are fully erupted, the deep fissures should be searched with your finest and slenderest examiners, turning the intrument so that the width of the blade is in line with the fissure under examination, and if you can find any place, however minute, where you can penetrate between the rods of the enamel, there is indication for immediate treatment.

I remember with sorrow to this day a first molar which I passed over in examination in June about thirty years ago. It was not fully erupted, but when I saw the boy again in October the tooth was ruined; decay had reached the pulp, and, though we fought it out and made of it a somewhat useful tooth, its strength and beauty had gone forever. I had overlooked a little fissure defect that I ought to have noted and corrected.

Sir Walter Scott said to his son, "Be aye planting a tree, Jock, for it'll grow while you're sleeping," and in this matter decay is like the tree, "it grows while you're sleeping."

The cavities that form between the teeth at the point of contact

are not so sure and easy of detection, but there color is somewhat of a guide, and your instrument does not tell you this. Then, if in doubt, a slight separation made by a bit of linen tape kept between the teeth for twenty-four hours, or a short piece of fish line tied around the point of contact for the same time, will allow you to see clearly the color, as well as the character of the surface, and will allow you to decide whether or not you are dealing with decay.

Having completed your examination, and coming to the treatment of the teeth—including the preparation of the cavity, the filling and the finishing—your success in arresting decay will be largely due to your attention to very little things in each of these departments. In the preparation of the cavity, you must first see that it includes all the decay, even that which is as yet only a whitish color on the surface; that the edges are sound and firm; that the shape is adapted to retain the filling, and as far as possible to so change the conditions under which the tooth decayed that it shall not decay again at that point. Then, in a fissure cavity, you must see that it is cut out to the end of the fissure and wide enough to leave a rounded surface when the filling is in; beyond this it is unnecessary to go. In an approximal cavity, not involving the crown, you should see to it that, when the work is finished, the teeth touch on a surface of filling, not of tooth.

In the filling we must see that the parts most difficult of access are made as sound as those in plain view, that each step is fully complete before passing on to the next, so that when the end is reached we have a homogeneous filling sufficiently contoured to restore the natural shape of the organ. The surface must be as smooth as that of the original tooth and perfectly flush with it at the edge, polished clear to the gum margin of the filling. I have very frequently seen fillings which were solid and highly polished upon their dorsal surfaces, but which were so rough on their approximal surfaces that the dental silk could hardly be used, and such lodgment of food and other matter permitted that in a few years, or even months, decay has recurred, requiring more or less extensive additions to the filling.

This leads me to speak of the value, the vital necessity, for examining our work after it is completed, for our foe is vigilant and unerring and will surely find the weak point that you or I may overlook. We may easily satisfy our patients—they will beg you to stop that useless polishing, and it is hard to keep on while another

patient is waiting, for the sake of correcting one minute point of defect which no one but ourselves knows is there. Yet that defect, recognized and not corrected, leaves not only a weak spot in the tooth but a flaw in our own character.

Leaving now the care of the teeth, let us turn to the problems of replacement and see if we do not find need for the same minute observation, the same exact touch, the same unwearied persistence in the pursuit of perfection which operating demands. Those of you who have worked in porcelain know well how great is the need of this exactness and care in little things, how carefully your matrix must be adjusted, how delicately handled to make your result a joy to the eye and not a constant eyesore. I have known a busy man spend hours in seeking an exact shade to match a pivot tooth the natural ones on each side. He was like the sculptor of the story who had been working over his model for a week without any apparent result —"What have you done?" "I've deepened this line, I've softened the outline of this muscle, I've changed this curve a little." "But these are mere trifles." "True," said the sculptor, "but perfection is made of trifles, and surely perfection is no trifle." I need not follow out all the details of this work, the adjustment of each part, the careful attention to the curves of the natural arches, for you will easily supply them for yourselves; but no detail is too insignificant, no part too small, to allow us to slight it, for it is in the little things that the difference lies between the work of a skillful master, an artist, and a crude mechanic, not even a good artisan.

Passing from the teeth, let us notice your surroundings, your instruments, your office, your person. It is a little thing to keep instruments keenly sharp, yet it saves pain; to keep them polished, yet it promotes safety; to have them sterilized, yet it protects others as well as yourself from a real danger. It is a little thing to have your office clean and tidy, to have a place for each thing that you may lose no time in hunting for it.

It seems like wasting time to keep records clearly and exactly, so that you can watch your work from year to year and know just how it stands and what are its tendencies, and yet some such record is necessary for that long view of life and work which makes experience valuable to yourself and others.

It is a little thing to keep hands and nails surgically clean, with soap which leaves no strong, distasteful perfume; your own mouth

in perfect order, cleansed after each meal with great care; that your breath may not offend—and yet this personal cleanliness will be noticed by your patients and will help or hinder you. Your patients' eyes are very close to you and will note any defect in your appearance. Soiled linen, clothing adorned with grease spots will have their influence.

In your work you must meet each one with cheerfulness and help each one in a different way, grave to one, gay to another, yet true to each, ever seeking by the little kindnesses of which the poet speaks:

"She doeth little kindnesses,
Which most leave undone or despise.
For naught that sets one heart at ease,
And giveth happiness or peace,
Is low-esteemed in her eyes"—

to make your work easier for others, to relieve nervous dread and fatigue.

The little courtesies of meeting and parting, watchful care to avoid little possible annoyances, consideration of the special weaknesses and wishes of each one, promptness in answering notes, care in making and keeping appointments, these are little things but are essential to your character and have their influence upon your work. You must cultivate a cheerful spirit that will not be defeated nor crushed, that meets difficulties with quiet confidence and readiness of resource; watch your words that you do not hurt nor offend, that you do not, by little innuendoes, do harm to another's reputation. Watch your thoughts that they are worthy of yourselves and your patients. Watch your habits lest in little things they undermine your character, and ever set your faces to that which is noblest and best, that you may be worthy of your work.

"Let me but do my work from day to day
In field or forest, at the desk or loom,
In roaring market-place or tranquil room;
Let me but find it in my heart to say,
When vagrant wishes beckon me astray,
'This is my work; my blessing, not my doom;
Of all who live, I am the only one by whom
This work can best be done in the right way.'

Then shall I see it not too great nor small,
To suit my spirit and to prove my powers;
Then shall I cheerful greet the laboring hours,
And cheerful turn, when the long shadows fall
At eventide, to play and love and rest,
Because I know for me my work is best."

—*The Frater.*

A CASE OF NECROSIS OF THE JAW IN A BRASS-FOUNDER.

Among the surgical cases in the out-patient room of King's College Hospital, recently under the care of Mr. Peyton Beale, was that of a man, aged about 25, who was employed in a brass foundry, who had developed necrosis of the mandible. The patient had noticed about five months previously that his incisor teeth of the lower jaw were becoming loose and painful; his gums were also tender and spongy, then the gums surrounding these teeth began to ulcerate and he had the whole of the lower incisors removed. The ulceration of the gums extended, and when he applied for treatment the whole of the front of the lower jaw was bare nearly down to the meatal process, but the bone was not in any way loose. Mr. Beale believed that the condition was caused by the fumes of zinc being inhaled, while the molten brass was being run into the molds for the purpose of castings. This would account for the gingivitis and the loosening of the the teeth; the probability was that septic organisms thus gained access to the sockets of the loosened teeth and to the periosteum of the lower jaw; the septic process then spread downward in front of and through the bone, causing it and the tissues in front of it to necrose. In treating such a case one might at once remove the necrosed bone, but he considered this procedure to be very undesirable, because (1) it was impossible to say how far the necrosis had really extended, particularly as regards the thickness of the bone; (2) the parts were necessarily highly septic, and in dividing the bone there was a certainty of infecting tissues which were hitherto free from infection. He considered the best line of treatment to consist in cleansing the mouth as far as possible by the use of a tooth-brush and a 1 in 20 solution of lysoform, which he had found to be the most desirable antiseptic for use in the mouth. The necrosed bone

would then gradually separate and in the course of a few weeks would be found quite loose and capable of being picked out bodily. The resulting deformity was very much less than it would be if the bone were removed before a natural line of demarcation had been formed. He had come across three or four similar cases and they were very like the necrosis produced by phosphorus poisoning. As regards the gingivitis the internal administration of iron and arsenic seemed to be beneficial, but it was a noticeable fact that it was very difficult to stop the inflammation owing to the difficulty of procuring asepsis of the mouth. He believed the actual necrosis was entirely a septic process, the primary ulceration of the soft parts only being caused by the fumes from the molten metal. It was, of course, necessary that the man should not continue the same work.—*The Dental Surgeon.*

CRITICAL ESSAY.

Three Interesting Articles Concerning the Dentist and Physician of the Future.

BY THE EDITOR.

A question of considerable interest at the present time and one that is agitating some of the best minds in both professions, is how best to establish on a firm basis the close relationship which naturally exists between the work of the dentist and that of the physician. Shall dentistry become a specialty of medicine and surgery; or would it be better to incorporate the principles of the latter in an expanded course of dentistry? In short, shall dentistry in the future include the *art* of dentistry and the science of medicine? Or shall medicine in the future include dentistry as one of its specialties?

That the present divorced condition of affairs has led to weakness and ignorance on both sides, may be seen in the fact the physician is unable to appreciate the importance of recognizing certain oral conditions in the diagnosis and treatment of many systemic disturbances;

while, on the other hand, the dentist fails to understand that some underlying constitutional dyscrasia is often responsible for the oral manifestations he meets with, and ought to be considered in any rational treatment of the case.

Some interesting observations, in the nature of a prophecy, concerning the dentists and physicians of the future, have appeared recently in papers published in the current medical journals, to the following three of which we direct attention here as being apropos; to-wit:

1. *The Boston Medical and Surgical Journal,* June 8, 1905, contains an editorial on "The Physician of the Future," based on an address delivered to the graduating class of the Medical and Dental Schools of Columbian University, Washington, D. C., by Dr. H. W. Wiley, of the United States Department of Agriculture, who presented some suggestions in a way to attract attention.

Dr. Wiley believes that of all the arts near to the welfare of man the two nearest and most necessary are the art of agriculture and the art of healing. "Man must first of all be nourished, and next to this, kept in health. A time might come when lawyers would disappear; we might grow perfect enough to dispense with ministers of the gospel; but Ceres and Hygeia would continue to be indispensable."

"Good food well masticated," continues he, "and good hygiene well applied, mean good health. But good food is not prechewed and predigested food, and the professions of medicine and dentistry must stand together in the future to fight such evils. Those who can furnish the people with good teeth and keep their stomachs in prime condition need not care who makes the laws nor who writes the songs in this country."

Dr. Wiley believes that the specialist and the health officer are the forerunners of the physicians of the future; and, judging from the tenor of his subsequent remarks, he is of the opinion that the dentist is in reality such a specialist and will be found fighting shoulder to shoulder in the ranks of those whose aim is to preserve the parts of the human organism in such form and repair as to guarantee good health to their possessor.

2. *The Southern Clinic,* May, 1905, has for its leading contribution, an article by H. B. Ray, M. D., D. D. S., of Tompkinsville, Ky., on the subject of "Dental Advice to the General Practitioner,"

the man who is usually the first to see cases requiring dental attention and consequently should know the correct thing to suggest in the more common cases requiring dental advice.

This author is of the opinion that the oral condition most frequently met with by the medical practitioner is an aching tooth, and that it is necessary to understand the cause which produces the toothache in order to be able to intelligently treat the case. Inasmuch as the painful and troublesome condition often leads to alveolar abscess if relief is postponed, it becomes doubly necessary for the physician who first sees the case to know just what advice to give the patient in order that he may be spared the pain and consequences incident to this state of affairs, which oftentimes results in alveolar fistula and, in extreme instances, even necrosis of the jaw.

In those cases in which there is a cavity but no nerve exposure, he thinks that the treatment is simple enough; that prompt relief usually follows the local application of a sedative and the exclusion of the oral secretions from the cavity; after which temporary procedure, the patient should be advised to consult a competent dentist.

The kernel of Dr. Ray's advice is to be found in his recommendations to the physician to so acquaint himself with the rudiments of oral prophylaxis that he may be enabled to intelligently apply "first aid" in a given case, and then refer his patient to the proper authority—the dentist. But, at the same time, we would suggest that the dentist, himself, has an equal responsibility; he should be enabled to determine whether the trouble is altogether a local one or not. For example, the disabled tooth and its surroundings may be only one of the manifestations of some systemic disorder (as lithæmia or gout), in which case constitutional treatment is indicated. The dentist should know either what internal remedies to employ in such a case, or else (after applying his local measures for relief) refer the patient back to a competent physician.

Concerning the points above mentioned, we are fully persuaded that the physician of the future will be in a position to carry out the plan suggested by Dr. Ray, and that the dentist of the future will be sufficiently grounded in the principles of medicine to combine both local and general treatment in the manner we have suggested.

3. In a paper read before the Pennsylvania State Dental Society, at Ligonier, Pa., George W. Cupit, D. D. S., considered somewhat at

length the subject, "The Making of Dentists," which was subsequently published in the *Medico-Chirurgical Journal,* May, 1905.

This author truthfully says: "As it stands today, a graduate of medicine could no more practice dentistry than could a graduate of a purely dental course practice medicine—*i. e.,* speaking from a practical and not a legal viewpoint. Whether this peculiar relation is to continue indefinitely, and the profession of dentistry, like those of law, medicine and theology, is to remain separate and distinct among these her sister professions will be determined probably within the next decade. So wonderful has been the development of dentistry that it has literally outgrown itself, passing from an experiment, with a few mechanical principles in the primitive tooth extraction by the barber and the blacksmith to the condition of today, when the intelligent practice of dentistry is the embodiment of the highest degree of art on its practical side, and on its theoretical side a great part of the science of medicine."

Dr. Cupit looks forward to the day when dentistry will include the science of medicine also, which shall enable every graduate of dentistry to first obtain the M. D. degree and then that of Doctor of Dental Surgery. He believes that if we will but look over the field to be covered by the dental graduate and practitioner, we shall find that nothing short of a knowledge of medicine—the anatomy and physiology; the chemistry and materia medica, with its pharmacology; the study of life in biology; of disease in pathology; its causes in bacteriology; and its treatment in therapeutics—will facilitate the intelligent consideration, understanding and treatment of the pathological conditions of the system resulting from dental lesions and disorders, as well as those of *dental disorders resulting from systemic disturbances.*

Speaking from the dental standpoint, he says: "How seldom does the physician appreciate the importance of oral conditions in the diagnosis of many systemic disturbances!" "But," adds he, "these are motes in the eye of our brother; let us look to the beam that is in our own. How many of us are able to recognize catarrh of the stomach or a gastritis where we have symptoms in the mouth indicating such condition; or tonsillitis in its more acute form, or facial neuralgia, and to prescribe intelligently for the relief of them?"

To meet the world's need for a continually growing higher standard, in dentistry as well as in other fields, Dr. Cupit thinks it will not do to continue to admit the same poor material and quality of applicant that mark the average list of matriculates in the dental schools of today. As he says, "It might just as well be expected to make a mahogany table out of a pine board, as to make the broad, scientific, modern dentist out of many of the applicants seeking admission into our schools today."

The standard for admission must be raised. This, he thinks, is the remedy. Many of the present applicants have apparently never passed out of the secondary grades of our public schools, and are unable to write legibly or to spell correctly; they have never been taught to reflect or to reason; many are foreigners and unacquainted with our language, and need the first and often the second year to master English. "These," he thinks, "are some of the adverse conditions with which the colleges have to struggle at present. How can they be expected to turn out in the too short time from such material, the scientific dentist that the world is beginning to demand?"

We are in accord with this author's opinion that one important duty of the future dental school and its teachers will be to develop the latent talents of the student for scientific study, and open up a new field of usefulness for him in the science of his profession; and, even then, the allotted time of his earthly life will be none too long to perfect him in the line for which he may be best fitted. Not in all the learned professions is there so great a need for laboratory work as in dentistry. For the proper study of pathology, the pathological laboratory is needed; for that of bacteriology, the bacteriological laboratory; of chemistry, the chemical laboratory; of materia medica, the pharmaceutical laboratory; of prosthenics, the mechanical laboratory; and we may with advantage add, that for the first year's work at least, a laboratory for operative dentistry is needed.

In conclusion it may be said, that, as an example of the immutability of natural law, the fact may be cited that invariably when the natural artisan is found struggling with science, and the born scientist is found struggling with mechanics, it is but a question of a short time when the scientist will cease to operate and the mechanic will cease to "science."—*Uric Acid Monthly.*

RADIORO, A NEW ALLOY.

Radioro, or radium gold, says the *Leipziger Uhrmacher Zeitung,* is a remarkable new alloy which, according to report, is destined to work a radical change in the metal industry. This new metal is said to be brilliant, like gold, does not tarnish, is readily melted, is as hard and elastic as steel, and so ductile that it can be made as thin as leaf gold. In casting, its surface is as smooth as pure gold, and without roughness or blisters of any kind. With all these wonderful properties it can be sold at a smaller price than copper. The name of the inventor is Ugo Travaglini.—*The Dental Surgeon.*

DISTILLATION OF COPPER AND GOLD.

The electric furnace has already led to many results of far-reaching practical importance, and recently Moissan has in this apparatus, by means of an electric current of 800 amperes at 110 volts, succeeded in distilling several kilograms of copper in a few minutes. The product contains 99.76 per cent of copper and traces of graphite and lime as the only impurities. (*Comptes Rendus de l'Academie des Sciences,* 1905, vol. 141, p. 853.) Gold can also be readily distilled in the electric furnace; its boiling point, although higher than that of copper, is lower than that of lime. When condensed the distilled gold is obtained in filiform structure and as crystals. A product having the color of purple of Cassius and consisting of tin dioxide, lime and gold is produced when gold-tin alloys are distilled. The substitution for lime of silicia, alumina, magnesia and zirconia gives rise to distillation products having other colors (*loc. cit.,* p. 977).—*Dental Surgeon.*

MISCELLANEOUS

A NEW SCHOOL.

The Chicago School of Anesthesia and Extraction of Teeth is the name of a recently organized school. Dr. L. O. Green is president, Dr. L. W. Nevins dean, Dr. O. W. Green consulting physician, and Dr. F. K. Ream secretary. The college quarters are in Suite 411, Bay State Building.

MERCURY TANNATE.

If the stomach can stand no other form of mercury, try the mercury tannate. Give it in pills or granules one-sixth to one-half grain, three to six times a day. It is one of the least irritating compounds of mercury.—*W. J. Robinson, American Journal of Clinical Medicine.*

UTILIZE YOUR WORN MANDRELS.

When a mandrel has been used for some time and will no longer hold a disc firmly, instead of discarding it, as so many of us do, place a carborundum stone on it and in time we will have a good assortment of stones ready for instant use, and it will save both time and money.—*J. E. Cummings, Chicago, Review.*

THE BRAKE FETISH.

Brakes are useful on the wagon—but no brake ever moved it an inch. No wagon ever earned a copper standing still in a bog. Because the brakes once saved us from running down hill to destruction is no reason for our unhitching the team and sitting for the rest of our lives in the wagon silently worshipping the brakes. Good as is the brake, the hold back, better by far is the headlong career that at least carries us on, if we have to choose but one of them. But we don't. We appreciate at its full value the brake—but we rely on the team that pulls, the engine that boosts, and the automobile, the very embodiment of action itself.—*American Journal of Clinical Medicine.*

PYORRHEA IS HEREDITARY

Judging from my clinical experience I am convinced pyorrhea is hereditary and at its early stage amenable to treatment. After careful instrumentation in four-fifths of my cases, I have discovered serumal calculus by inserting a thin, narrow chisel through the gingival space on the proximal side of the roots.—*E. R. Carpenter, Chicago, Review.*

THE POINT OF VIEW.

Clinician (surveying the smoking ruins): "A bucket of water at the beginning would have saved the house."

Pathologist (contemptuously): "Look at those ashes and tell me you can reconstruct that house from them with a bucket of water."

Surgeon: "But it could have been extinguished by blowing up with dynamite."—*The American Journal of Clinical Medicine.*

"EARACHE" AND THE TEETH.

A physician near here treated a patient for three weeks for earache and neuralgia, but failed to relieve her, except by the use of sedatives. Finally she complained that a lower wisdom tooth felt longer than the rest of her teeth. Her physician came to the conclusion that probably that tooth was the cause of her suffering. I was called in to extract it. She was pillowed and propped up in a Morris chair. Constant pain soon wears down the strongest constitutions, and this woman was certainly in a debilitated condition. She also had a heart affection which did not help matters. Her physician and several of the neighboring women were present. I never wish my competitors bad luck, but I certainly did wish one of them had this case. I got out my "torture goods" and proceeded to remove that tooth in the latest and most scientific manner. I succeeded most beautifully—that is, I broke the tooth the first attempt. After assuring her that the breaking of the tooth would give her as much relief as if I had extracted it, I mustered up enough courage to take a look at the remains. To my surprise I discovered I could remove it quite easily. When I got that tooth out she heaved a sigh of relief, for the pain ceased almost instantly. In a week she could do her own work.—*J. A. McPhail, American Journal of Clinical Medicine.*

TO PREPARE ALUMINUM PLATES FOR RUBBER.

Do not spur them. The only way to successfully attach rubber to aluminum is by use of the loop punch sold by all dealers. Make one row near the margin, four loops on each side, and one row of eight on the ridge. Punch the loops after the case is ready for packing the rubber, for then it will not be necessary to fill the palatal openings with wax.—*L. P. Haskell, Chicago, Review.*

APPLICATION OF ARSENIC.

Apply the rubber dam, dry the cavity, place the arsenic preparation in direct contact with the pulp, seal the cavity with any material that will absolutely insure the confinement of the arsenic, and allow it to remain in the tooth from four to six days. Upon the return of the patient apply the rubber dam, remove the arsenic, open up the pulp chamber, relieve the engorged blood vessels, and thoroughly dehydrate the pulp by use of absolute alcohol. Reseal the cavity and allow it to go ten days or two weeks or such an interval of time as will insure sloughing of the tissues. At the appointed time for the removal of the pulp, apply the dam as before and dehydrate with alcohol. By this process the pulp will lessen its caliber and toughen in its tissues and may be removed in its entirety with no hemorrhage or weeping of blood serum.—*J. G. Reid, Chicago Review.*

FUSING PORCELAIN.

The following deductions are from experiments:

1. That porcelain has no definite fusing point.

2. By prolonging the time of exposure to heat a thoroughly fused porcelain may be obtained at a comparatively low temperature.

3. That porcelains fused at a lower temperature for a long time will maintain their characteristic color.

4. That low-fusing porcelains can be made of high-fusing porcelains by repeated fusing and grinding.

5. If a piece of porcelain is thoroughly fused and more porcelain added and fused, the first layer will be slightly over-fused.

6. That porcelains containing a large percentage of flux are affected more by bubbles than those that are more nearly composed of the basal ingredients.—*J. Q. Byram, Indianapolis, Ind., Review.*

TO SET AN INLAY.

A hydraulic cement should be used, as it conduces much to the comfort of both patient and operator, the saliva being permitted to reach the case within two or three minutes, thus obviating the necessity of covering with varnish, etc. The excess cement should be permitted to remain until quite hard, when it can be removed, and the operation finished.—*George T. Banzet, Chicago, Review.*

BURNISHING MATRICES FOR INLAYS.

I wish to abolish the *bete-noire* of beginners of inlay work. That is, the fear of getting folds in the matrix at the margins. It is of absolutely no consequence, as, if the margins be properly prepared, the folds can be burnished down to the same gauge as the remainder of the matrix. The important consideration is the adaptation of the matrix to the walls and grooves of the cavity, and the avoidance of tearing it, and this can be more surely accomplished if the folds at the margins be disregarded.—*George T. Banzet, Chicago, Review.*

TO REMOVE COATING FROM INSTRUMENTS AFTER BOILING.

The coating which sometimes forms on instruments when boiling may be removed with the following solution:

Prepared chalk	2 oz.
Add ammonia	2 oz.
Alcohol	2 oz.
Water	4 oz.

Rub the instruments with a cloth saturated with the solution. Then wipe them with a dry cloth.—*J. Q. Byram, Indianapolis, Ind., Review.*

DIAGNOSING FRACTURE OF THE INFERIOR MAXILLARY BONE.

Most fractures occur in the body of the bone in the region of the mental foramen, and less frequently as we proceed in either direction from this foramen, being rare at the symphysis. In addition to the symptoms present in fractures of other bones, there will generally be one or more loose teeth at the line of fracture and the patient will complain of inability to properly close the mouth or to masticate food. It frequently happens that the patient comes for treatment or removal of the loose teeth without knowing that the bone has been fractured. —*Arthur D. Black, Chicago, Review.*

PERSONAL AND GENERAL

Dr. Robert L. Reynolds, a well known dentist in Amsterdam, N. Y., is dead at the age of 83.

Kills Wife.—Dr. J. A. Copus, a dentist of Muskogee, I. T., formerly of Toledo, Ohio, accidentally shot and killed his wife.

Appointed on Board.—Dr. G. C. Marlowe, of Lancaster, Wis., has been reappointed member of the Wisconsin State Board.

Trout-Bingham.—Dr. Clarence N. Trout, of Red Lyon, Pa., and Miss Mary Bingham, of Gettysburg, were married June 20.

Vedder-Reunerville.—Dr. N. Vedder, of Carrollton, Ill., and Miss Edna Reunerville were married June 7.

Dr. C. W. Miller, formerly of Cedar Rapids, Iowa, and later a dealer in dental specialties, died at Excelsior Springs after several months' illness.

Fire.—The office of Dr. E. L. Elmendorpp, at Pen Yan, N. Y., was damaged by fire May 23 with considerable loss.

Injured by Bicycle.—Dr. E. C. French, of Eau Claire, Wis., was severely injured by a fall from a bicycle recently.

Fire.—Dr. A. Coyle suffered a considerable loss by fire caused by explosion of gasoline stove in his office May 28.

Insane.—Dr. Ralph Frame, a dentist in Parkersburg, Ohio, has become insane through overwork.

Johnston-Emling.—Dr. S. A. Johnston, of Butler, Pa., and Miss Florence Emling, of Toledo, were married in Pittsburg June 9.

Marshall-Cobb.—Dr. Frank L. Marshall, of Boston, and Miss Mary A. Cobb, of Brighton, Mass., were married June 12.

Joins Keokuk Faculty.—Dr. John W. Marsh, of Warsaw, Ill., has joined the faculty of the dental department of the Keokuk medical school.

Dr. Edward L. Hamlin, a dentist at Waltham, Mass., died June 13. He had also practiced in Boston and at Thomasville, Ga. He was sixty-five years of age.

Breach of Promise.—Rachel Le Kanter, of Chicago, was denied damages in her suit against Victor C. Bell, a dentist in New York City, in the second suit for $25,000.

Fox River Valley Association met at Batavia, Ill., June 13 in semi-annual convention. Twenty-five dentists gathered and held a banquet in the evening.

University of Iowa to Enlarge.—The board of regents have decided to build an addition to the dental building of the State University, on account of the large increase in the number of students enrolled.

Another Dental Trust.—The dentists of the city of Stevens Point have decided to advance the price of extracting to 50 cents a tooth, this being the universal price throughout the state. The advance will take effect July 1, 1906.—11tf.—*Stevens Point Journal.*

Dr. Dana J. Jocelyn.—One of the oldest dentists in St. Louis, died in that place June 9th at the age of 75. He was a nephew of Dr. Gardner S. Coulton, who is said to have first discovered the anæthetic value of nitrous oxide gas, and Dr. Jocelyn began using it in his practice in 1866.

Robberies.—The following robberies have been reported: Drs. Butler & Lovitt, of La Harpe, loss $100; A. B. and W. A. Dorland, Grand Rapids, Mich, loss $200; C. C. Backus, Dixon, Ill., loss $125; P. J. Morton, Lincoln, Neb., loss small.

Dr. A. M. Hill, of Greenville, S. C., died in Augusta, Ga., where he had gone for treatment. He had practiced his profession for over thirty years in Greenville, where he also spent his boyhood days. He leaves a wife and three sons.

Dies From Prick of Instrument.—The slight prick of a dental instrument, penetrating the flesh underneath a finger nail, brought death to Dr. James F. Wark, a dentist at Cleveland, Ohio. Two days after the seemingly slight accident, to which Dr. Wark at first paid no attention, he was seized with an illness which terminated in death.

Dr. Andrew S. Cutler, a retired dentist, died at Rockwood, Tenn., June 11, aged 67 years. Dr. Cutler was a graduate of the Baltimore College of Dental Surgery, class of 1867, locating the same year in Kankakee, Ill., where he continued the practice of his profession until 1904, when failing health compelled him to retire.

Dr. Charles Wesley Stainton, probably the oldest dentist in point of practice in Buffalo, died in that place June 6. He was a graduate of the University of Pennsylvania and had practiced 40 years in Buffalo. At various times he held the offices of treasurer of the Dental Society of the State of New York, censor of the Eighth District Dental Society and president of the Buffalo Dental Association. He was always actively identified with dental affairs in Buffalo.

Bring Action for Costs.—Thirteen dental students who last spring were refused their diplomas but have since received them as a result of a decision of the supreme court, have begun an action against the state for the recovery of costs and damages. The state examining board of dental colleges last year decided the Milwaukee college was not reputable and refused its graduates certificates until compelled to submit by a ruling of the supreme court.

New Society in Georgia.—A number of dentists in Georgia have organized an association "for the enforcement of the state dental laws." Dr. A. M. Jackson, of Macon, was elected president; Dr. P. E. Callihan, of McRea, vice-president, and Dr. R. Holmes Mason, of Macon, secretary and treasurer.

Dentist Missing.—The police of Los Angeles have been asked to locate Dr. C. L. McPike, a San Francisco dentist who disappeared at the time of the fire, April 18. His wife writes to the chief of police that her husband had an office at Eighth and Howard streets and was at first thought to be killed. Later she received information that the disaster had made him insane.

Oldest Dentist in the World.—Dr. Corydon Palmer, of Warren, Ohio, one of the members of the Northern Ohio Dental Association, which recently convened in Cleveland, is the oldest dentist in the world. Although ninety-two years of age, he is still actively engaged in the practice of his profession at Warren, where he opened an office when a young man. He says that when one looks back upon the crudities of the dental work sixty or seventy years ago as compared to that of today with the wealth of modern appliances and processes, one is almost startled that he ever had the courage to practice the profession at all.

The Editor's Wail.—There is a new trust in town, the members thereof being the four husky doctors of dentistry. Readers of The *Democrat* will no longer see the usual cards which courteously announced their office location. They have combined against publicity, and each agreed with the other that the newspaper publisher was rolling in too much of their wealth. So they cut it out. We are not particularly grieved over this loss of business, but it has certainly come to a pretty pass when even a dentist can not control his own business.—*Decatur (Ind.) Democrat.*

Louisiana State Dental Society.—The Louisiana State Dental Society brought its twenty-eighth annual meeting to a close June 3 with the reading of papers, election of officers, and a banquet at Gallatoire's, New Orleans. Dr. Faguet A. Blanchard, of Marksville, was elected to the presidency. Dr. J. W. Tenney, who filled the position of second vice-president, became first vice-president; Dr. H. P. Magruder, recording secretary, became second vice-president. Dr. E. J. Zeidler was elected recording secretary, while Drs. A. L. Plough and Charles Mermillod Sr. were retained, respectively, as corresponding secretary and treasurer. The executive committee remains the same, and is composed of Dr. Andrew G. Friedrichs, chairman, and Drs. L. D. Archinard, J. H. Landry, A. J. Dauterive, O. L. Braud and Paul De Verges, secretary.

REMOVALS.

Dr. Ralston from Grand Forks, N. D., to Larimore, N. D.; Dr. A. Ditty from Long Beach, Cal., to Pomona, Cal.; W. W. Chambers from Puebla, Mexico, to San Antonio, Tex.; Dr. J. H. Pearson from Chicago to Aurora, Ill.; Dr. Maurice Buck from Bloomsburg, Pa., to Utica, N. Y.; Dr. R. E. Wyman from Deadwood, S. D., to Salem, S. D.; Dr. Verne Miller from Bremen, Ind., to Weir City, Mo.; Dr. L. E. Miller from Wrightsville, Pa., to Lebanon, Pa.; Dr. E. A. Miller from Hopkins, Mo., to Maryville, Mo.; Dr. O. R. Schroeder from Tomah, Wis., to Norwalk, Wis.; Dr. L. D. Craton from St. Louis to Ft. Worth, Tex.; Dr. G C. Wurzbach from San Antonio, Tex., to Ft. Worth, Tex.; Dr. Bert Merrick from Kansas to Tioga, Pa.; Dr. Baker from Granite Falls, Minn., to Montevideo; Dr. Smith from Elgin, Ill., to Ottawa, Ill.; Dr. John W. Marsh from Warsaw, Ill., to Keokuk, Iowa; Dr. O. C. Menes from Easton, Ill., to Chandlerville.

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